



Report on the Tobacco Epidemic in Marion County and Indiana



**RICHARD M. FAIRBANKS
SCHOOL OF PUBLIC HEALTH**

INDIANA UNIVERSITY
Indianapolis

September 2016

Funded through a grant from the Richard M. Fairbanks Foundation

Table of Contents

Executive Summary.....	2
The Tobacco Use Problem.....	3
✚ Tobacco’s Toll in the U.S. and Worldwide.....	3
✚ The Toll in Indiana.....	3
✚ Smoking Rates by Population Group.....	4
✚ Indiana’s Inadequate Response.....	6
✚ Smoking in Marion County.....	10
✚ Indiana and Marion County Health Indices.....	15
✚ The Business Case for Investment in Tobacco Control.....	18
✚ What Can Be Done?.....	19
Effective Solutions to the Tobacco Use Problem.....	20
✚ Raising the Price of Tobacco.....	20
✚ Raising the Legal Age for Smoking.....	28
✚ Adequately Funding State Tobacco Programs.....	29
✚ Conclusion.....	30
Tables.....	31
Figures.....	32
References.....	33
Appendix: CDC Best Practices Executive Summary, Indiana Recommendations.....	42

Executive Summary

Tobacco use remains a concerning and costly challenge to the health, quality of life and economic development of communities across the country. The challenge is particularly acute in Indiana, where the current smoking rate of nearly 23% leaves the state ranked 44th among all states. The same trend holds true for Indianapolis. In 2014, the city's adult smoking rate was 22%, placing it second-to-last in smoking rates among the 30 largest cities in the United States.

High rates of tobacco use translate to poor health and premature death. In Indiana, more than 11,000 citizens die prematurely each year from cigarette smoking, and 5,700 children under 18 begin smoking. Approximately 15 percent of Hoosier women smoked while pregnant in 2014, ranking Indiana among the 10 worst states in the U.S. in this category. Among the Medicaid population, 30 percent of pregnant women smoke, and Marion County's maternal smoking rate is nearly 40 percent higher than the national rate. High rates of maternal smoking are likely one driver of Indiana's disproportionately higher rates of infant mortality and underweight births when compared to the nation as a whole. Secondhand smoke represents a considerable danger as well. More than 1,400 Hoosiers die prematurely from secondhand smoke exposure each year. Secondhand smoke is also responsible for more than 900 low-weight births annually.

In addition to its health impacts, tobacco places a major financial burden on the state. The direct health care cost attributable to smoking in Indiana has been estimated to be \$2.9 billion in 2009 dollars, with the state Medicaid program bearing \$590 million of that cost. These costs amount to an unnecessary combined annual state and federal tax burden of \$982 for each Indiana household. This figure does not even include the health care costs associated with secondhand smoke in Indiana, which are estimated to be \$1.3 billion. Smoking also poses myriad problems for businesses in our state, including increased absenteeism, greater disability claims, lost work time spent on smoking rituals, and other factors. These all add up to lost productivity that is estimated to cost Hoosier employers \$2.6 billion annually. In fact, for each pack of cigarettes sold, our state bears \$15.90 in health care and lost productivity costs. Indiana's high smoking rates also have an impact on the state's appeal as a location to start and operate a business. Today, health care costs are second only to payroll expenditures for most businesses. As a result, more companies are looking at health rankings when deciding where to locate. In most of those rankings—from smoking rates to infant mortality—Indiana places near the bottom, making it a less attractive location for companies than in the past.

Fortunately, these problems are preventable. A number of effective solutions exist for lowering tobacco rates, improving health and lowering costs in Indiana. First, increasing the price of tobacco products would create a financial incentive for smokers to quit and for nonsmokers, especially teenagers, to avoid consuming tobacco. Research indicates that for every 10% increase in the price of cigarettes, overall cigarette consumption declines by 3% to 5% and smoking among pregnant women goes down 7%. Second, increasing the legal age for smoking in Indiana could be an effective tool for lowering smoking initiation—and subsequent smoking—by teenagers. Experts estimate that smoking rates would fall to 12% if the legal age were raised to 21. Finally, there is a need for increased funding for statewide tobacco prevention and control programs in Indiana. This funding can be put toward programs like mass-communication efforts, which aim to counteract tobacco marketing and raise awareness of cessation programs, as well other evidence-based tobacco control programs.

The Tobacco Use Problem

Tobacco's Toll in the U.S. and Worldwide

Tobacco use is the leading preventable cause of death in high income countries, and increasingly in low- and middle-income countries. [1] The harms of tobacco are typically expressed in terms of the public's health. If we think of tobacco use as a chronic disease, it is measurably one of the largest epidemics the world has ever faced. Tobacco kills roughly six million people around the world every year. About five million of those deaths are the direct result of tobacco use, but more than 600,000 non-smoking bystanders also die prematurely each year from exposure to secondhand smoke; children account for 28% of those deaths. [1]

Since publication of the first U.S. Surgeon General's report in 1964, which cited cigarette smoking as the primary cause of lung cancer [2], smoking rates among U.S. adults have decreased from 45% to just under 15.1% [3], a testament to the slow but steady progress of our nation's public health efforts. Despite this progress, the consequences of smoking continue to exact a heavy toll on the nation's health and economy. In the 50 years that have elapsed since that landmark report, nearly 21 million Americans have died prematurely from smoking and exposure to secondhand smoke. [4] In 2014 alone, nearly 480,000 American adults died from 21 diseases caused by the 7,000 chemicals in tobacco smoke. [5] This represents one in every five deaths in the U.S., an estimate that may actually be understated. If we consider that smokers have a 17% higher mortality rate than nonsmokers from diseases *not* established by the Surgeon General to be smoking related, annual deaths may actually be as high as 600,000. [4,5,6]

The toll that tobacco exacts on the nation's economy is significant. Between 6% and 15% of U.S. health care expenditures are directly attributable to smoking-caused diseases [1,7,8,9], with cost to the nation estimated to be between \$289 and \$332.5 billion per year. [4]

The Toll in Indiana

Tobacco use is by far Indiana's greatest public health challenge. More than 11,000 Indiana citizens die prematurely each year from cigarette smoking [10], and more than 1,400 nonsmokers die from exposure to secondhand smoke. [11] It is also estimated that 5,700 children under 18 begin smoking every year. [14] Approximately 15% of Hoosier women smoked while pregnant (2014), ranking Indiana among the 10 worst states in the U.S. in this category. [12] In the Medicaid population, 30% of pregnant women smoke, [13] which is one reason why Indiana continues to bear the economic burden associated with disproportionately higher rates of infant mortality and underweight births compared to the nation as a whole.

In Indiana, the direct cost of health care attributable to smoking was estimated to be \$2.93 billion in 2009 dollars, with the state Medicaid program bearing \$589.8 million of that cost. To cover these expenditures, Hoosiers pay an additional \$982 per household in state and federal taxes. [14] These figures exclude the cost of secondhand smoke and lost productivity. Indiana health care costs attributable to secondhand smoke are estimated to be \$1.3 billion. [11] The yearly cost burden to Indiana in terms of lost productivity due to tobacco is estimated at \$2.6

billion due to increased absenteeism, greater disability claims, time spent on smoking rituals and other factors. [15]

Although Indiana's adult smoking rate is still high, the trend has been downward from 32.8% in 1990. Over the past six years, the rate has hovered around 23% (Table 2). [16] The Hoosier state lags far behind most states in reducing the number of adults who smoke.

- Indiana currently ranks 44th among states, with a smoking rate of 22.9%, up one percentage point from the previous year. [16]
- The highest ranked state for adult smoking is Utah with 9.7%, followed by California with 12.8%, and Hawaii with 14.1%. [16]
- The top ten healthiest states have smoking rates of 17.5% or less. [16]
- The Healthy People 2020 goal established by the U.S. Centers for Disease and Prevention is 12%. [17]

Table 1 Indiana's Smoking Rate 2010-2015 [21]

Year	2010	2011	2012	2013	2014	2015	HP 2020
Indiana's Smoking Rate*	23.1%	21.2%	25.6%	24%	21.9%	22.9%	12%

*Source: BRFSS data. Note: The Centers for Disease Control and Prevention changed the definition of the smoking rate for 2012. Years 2010 and 2011 have limited comparability to years 2012-2015.

Smoking Rates by Population Group

Latinos (Indiana and the U.S.) [18, 19]

- In 2014, the smoking rate for adult Latinos in Indiana was 14.1%, higher than the U.S. median for Latinos of 11.2% in 2014.
- Between 2011 and 2014, smoking rates among Latino adults in Indiana declined about 35%.
- Smoking rates among Latino adults in Indiana were significantly lower than smoking rates among whites (23.1%) and African Americans (27.1%) in 2014.

African Americans (Indiana and the U.S.) [20]

- The smoking rate for Hoosier African Americans in 2014 was 27.1%, significantly higher than the national rate among African Americans (17.5% in 2014).
- The prevalence of smoking among African Americans in Indiana is higher than the smoking prevalence among whites and Hispanics and higher than the overall Indiana adult smoking rate of 22.9% (2014).

Lesbian, Gay, and Bisexual Adults (Indiana) [21]

- Lesbian or gay adults were over two times more likely to smoke cigarettes than heterosexual adults (2014).

- For both sexes combined, bisexual individuals were nearly 50% more likely to smoke cigarettes than heterosexual individuals.
- Over half (50.6%) of gay men reported smoking, compared with 24.3% of heterosexual men.
- More lesbian (43.4%) and bisexual (37.4%) women reported smoking than heterosexual women (20.7%).

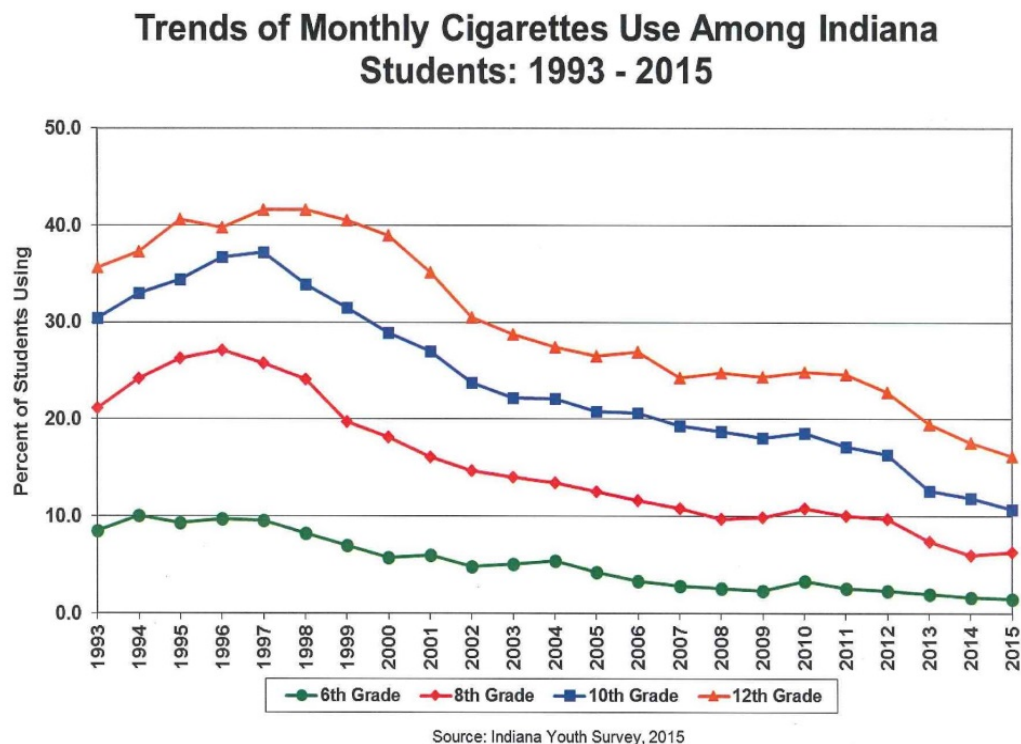
Adults with Mental Illness (Indiana and United States) [22]

- Approximately 1 in 5 adults in the U.S. (18.5%) and in Indiana (22.3%) have a mental illness.
- In both Indiana and the U. S., adults with mental illness smoke at much higher rates than adults without mental illness.
- Individuals with mental illness or substance use disorder smoke nearly 40% of all cigarettes smoked in the United States.
- Indiana adults who report frequent poor mental health days (>14 in the past month) are more than twice as likely to smoke as adults who do not report frequent poor mental health days.

Youth Smoking

Over the past six years, youth smoking has continued to trend downward, according to the Indiana Prevention Resource Center (Figure 1). [23] Smoking rates among youth dropped significantly in the early 2000's, coinciding with finalization of the Master Settlement Agreement and start-up of the Indiana Tobacco Prevention and Cessation (ITPC) agency. [24]

Figure 1 *Indiana Prevention Resource Center, Youth Smoking Trends*



Indiana's youth rates are slightly higher than those of the nation at large. Indiana youth responses to the 2015 High School Youth Risk Behavior Survey (YRBS), administered by the U.S. Centers for Disease Control and Prevention (CDC) and the Indiana State Department of Health, illustrate (Table 2). [25]

Table 2 Youth Responses to Tobacco Questions, YBRS 2015 [25]

High School YRBS Questions – 2015	Indiana	US
Ever tried cigarette smoking (even one or two puffs)	37.0%	32.3%
Smoked a whole cigarette before age 13 years (for the first time)	8.2%	6.6%
Currently smoked cigarettes (on at least 1 day in 30 days before the survey)	11.2%	10.8%
Currently smoked cigarettes frequently (20+ days, 30 days before survey)	3.4%	3.4%
Smoked More Than 10 Cigarettes Per Day (on the days they smoked during the 30 days before the survey)	8.7%	7.9%
Currently Smoked Cigarettes Daily (on all 30 days during the 30 days before the survey)	2.8%	2.3%
Currently used tobacco (current cigarette, smokeless tobacco, or cigar use)	32.4%	31.4%

This gap has decreased since the last time the YBRS was administered in Indiana (2011). [25]

Secondhand Smoke Exposure

Secondhand smoke, or smoke inhaled from burning tobacco or another person's exhaled smoke, contains more than 7,000 chemicals, including more than 70 carcinogens and other irritants and toxins. [11] Studies have shown it can cause heart disease, cancer, respiratory problems, and irritation of the eyes and nasal passages. According to the Indiana State Department of Health, more than 1,400 people die prematurely from secondhand smoke exposure each year, including 17 infants and children. [11] Secondhand smoke is responsible for more than 900 low birth weight babies born annually in our state. [26] Costs associated with secondhand smoke exposure are estimated at \$1.3 billion for health care and premature death, equating to about \$200 per person per year. [11]

Indiana's Inadequate Response

Indiana's failure to prevent disease by lowering smoking rates and adequately protecting citizens from secondhand smoke has been one critical factor in the descent of its overall state health ranking (Figure 2). In 1991, Indiana ranked squarely in the middle of states at 26th. In 2015, Indiana ranked 41st, placing Indiana among the bottom 10 states (Figure 3). [27]

Figure 2 Relative Importance of Smoking to Indiana's Health Status [27]

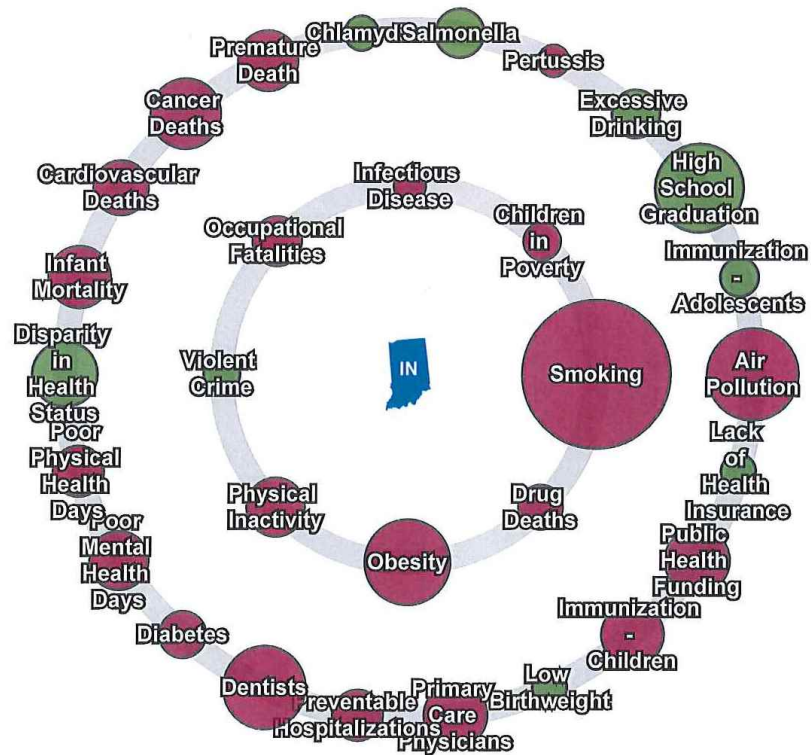
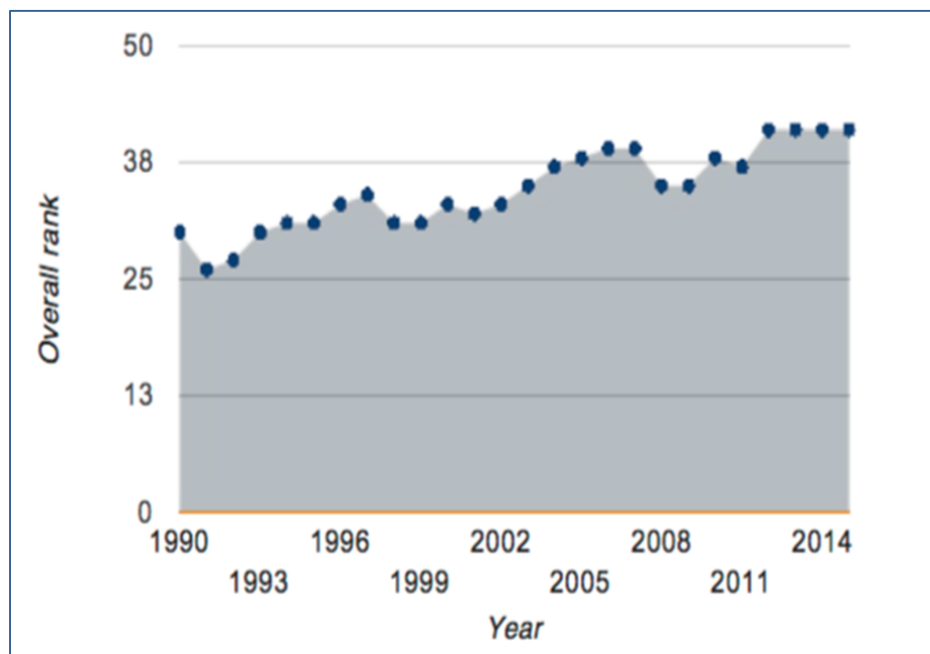


Figure 3 Indiana's Health Ranking, 1990-2015

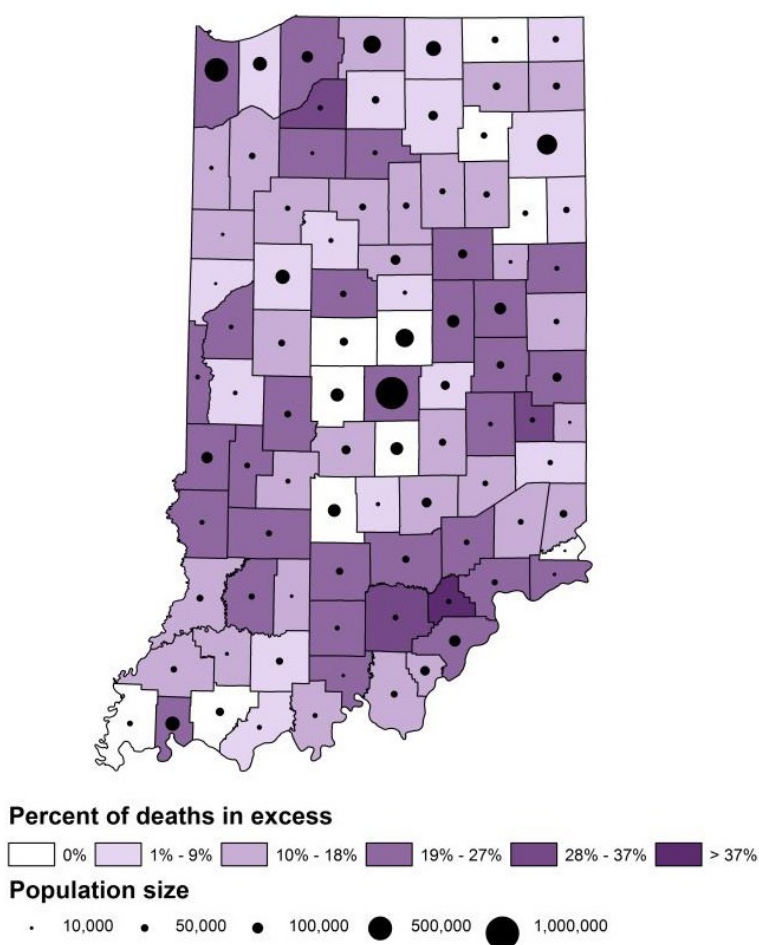


Disparities also play an important role in Indiana's overall health status. The opportunity to be healthy varies considerably between counties in the Hoosier state. These disparities are costly, in terms of health care and lost productivity, and *preventable*.

In 2015, the County Health Rankings and Roadmaps group analyzed the disparities between counties in every state based on residents' opportunity to be healthy. The excess mortality for every county was computed as well as the state as a whole.

Based on their analyses, only 11 of 92 Indiana counties had 0% excess mortality (Figure 4). The state as a whole had 4,500 preventable excess deaths. If Hoosiers all had an equal opportunity to be healthy, the County Health Rankings Gap Report estimates there would be **242,000** fewer adult smokers in Indiana. [28]

Figure 4 Percent of Excess Deaths and Population Size in Indiana [28]



The CDC recommends \$73.5 million in tobacco control funding in Indiana. [29] According to 2014 data, Indiana spent roughly \$7.7 million a year in federal and state funds on tobacco prevention and cessation, ranking Indiana 33rd out of 50 states. [91] However, this hasn't always been the case. [30, 24] In 1998, Indiana joined with 45 other states in a lawsuit against the tobacco

industry. As a result of that suit, Indiana settled with the tobacco companies to receive \$4.5 billion for the first 25 years and additional monies in perpetuity through the so-called *Master Settlement Agreement* (MSA). [31] The Indiana Legislature drew upon settlement monies to establish an independent agency – the *Indiana Tobacco Prevention and Cessation* (ITPC) *Agency* – whose only purpose was to build community coalitions, coordinate programs and promote CDC best practices designed to reduce the burden of smoking in the state. The bill creating the ITPC was signed into law in 2000 with an annual appropriation of \$35 million [32], placing Indiana in a leadership position nationally as 1 of only 6 states to reach the minimum level of funding recommended by the CDC for tobacco control and prevention. [33]

Today, the ITPC no longer exists as an independent entity, having been absorbed as a division by the Indiana State Board of Health and renamed the Tobacco Prevention and Cessation (TPC) Division. Prior to the merger, persistent funding cuts [30] meant the TPC was able to maintain local coalitions in only 65 of Indiana’s 92 counties [34]; today only 36 counties are still receiving grants to support community-based smoking prevention and cessation activities. [35] The TPC annual budget from MSA funds has fallen from \$35 million in 2000 to \$5 million (appropriated) in 2016, which equates to just **3.8%** of the total received from the Master Settlement Agreement in 2016. [34, 36, 37] Given that Master Settlement Agreement payments form such a large share of tobacco control funding in the state, this decline has meant a steep drop in tobacco control efforts for Indiana.

Table 3. Master Settlement Agreement Payments Compared to State Tobacco Control Budgets 2012 - 2016					
Year	2012	2013	2014	2015	2016
Master Settlement Payment	\$129,534,300	\$129,467,003	\$67,374,707	\$124,000,000 (Appropriated)	\$133,000,000 (Requested)
ITPC Commission Allocation	\$8,051,037	\$7,809,506	\$4,716,600	\$5,000,000 (Appropriated)	\$5,000,000 (Requested)

Statewide tobacco control programs have five primary functions, according to the CDC [33]. These include 1) state and community interventions, 2) mass reach health communication campaigns, 3) cessation interventions, 4) surveillance and evaluation, and 5) infrastructure/ administration/management. These functions represent the best practices in tobacco control, and CDC evidence has shown that states who adequately fund and implement these functions are most likely to reduce their tobacco use rates [33].

These functions combined would have an annual cost for Indiana of \$51.2 million at the minimum level and \$73.5 million at the recommended level (see Appendix). Both levels are well within the annual Master Settlement Payment amount.

Smoking in Marion County

Marion County's overall smoking rate is slightly lower than the state of Indiana's rate but significantly higher than the average rates for the nation. The most recent Behavioral Risk Factor Surveillance System (BRFSS) data available demonstrate that (Table 4):

- Among Marion County residents, smoking prevalence was highest among African Americans and lowest among Hispanics in 2014.
- When compared to the rate among Hispanics, smoking prevalence was 2.5 times higher among African Americans and 2 times higher among Whites in 2014.

These disparities in the smoking rates in Marion County compared to the U.S. illustrate how far behind the Greater Indianapolis metropolitan area is in reducing tobacco use among its citizens.

Table 4 2014 Smoking Prevalence in Marion County, Indiana and the U.S.

Category	Marion County Prevalence, 2014 (95% CI)	Indiana Prevalence, 2014	U.S. Prevalence, 2014
Gender:			
Male	25.4% (20.7-30.1)	24.5%	18.8%
Female	19.2% (15.6-22.9)	21.5%	14.8%
Race/Ethnicity:			
White	22.2% (18.5-26.0)	23.1%	18.2%
African American	28.0% (21.1-34.9)	27.1%	17.5%
Hispanic	7.1% (2.5-11.7)	14.1%	11.2%
Total	22.2%*	22.9%	16.8%**

Source: 2014 Marion County BRFSS Data; DR2840. Percentages include respondents that indicated they smoke every day or on some days. *Prior to 2016, up to seven years of tobacco data were averaged to compute county level tobacco rates. This methodology did not produce adequate estimates, particularly for small counties. In 2016, the CDC computed county level rates using 2014 data only, reducing the comparability with previous years' rates. 2014 data in subsequent tables (Table 5 and Table 6) are taken from the 2016 County Health Rankings, which rely on this 2014 BRFSS data. **Although the U.S. adult smoking rate for 2015 was released by the CDC in May (15.1%), state, local and demographic breakdowns are not yet available. For comparability, 2014 rates were used.

Compared to counties where other large cities are located, Marion County lags behind in smoking rates. Of the 30 largest U.S. cities, Indianapolis/Marion County is tied with Nashville, Detroit and Louisville for second to last place in smoking rates (22%). Cities with the lowest smoking rates are San Jose and Seattle, with 9% and 10% respectively (Table 5). [38]

Table 5 Smoking Rates in the 30 Largest Cities in the U.S [38]

City	Population	Pop. Rank	County	Smoking Rate 2014	Smoking Rank
San Jose	1,105,785	10	Santa Clara	9%	1
Seattle	668,342	20	King	10%	2
San Francisco	852,469	13	San Francisco Co	12%	3
Los Angeles	3,928,864	2	Los Angeles Co	12%	3
San Diego	1,381,069	8	San Diego Co	12%	3
Austin	912,791	11	Travis	12%	3
San Antonio	1,436,697	7	Bexar	13%	7
Houston	2,239,558	4	Harris	14%	8
Boston	655,884	24	Suffolk	15%	9
Dallas	1,281,047	9	Dallas Co	15%	9
Phoenix	1,537,058	6	Maricopa	15%	9
Fort Worth	812,238	16	Tarrant	15%	9
Baltimore	622,793	26	Baltimore Co	15%	9
New York City	8,491,079	1	5 Counties	12%-19%	14
Charlotte	809,958	17	Mecklenburg	16%	15
El Paso	679,036	19	El Paso	16%	15
Washington, DC	658,893	22	N/A	16%	15
Chicago	2,722,389	3	Cook	16%	15
Denver	663,862	21	Denver Co.	16%	15
Portland	620,602	28	Multnomah	17%	20
Jacksonville	853,283	12	Duval	18%	21

Table 5 Smoking Rates in the 30 Largest Cities in the U.S., continued [38]

City	Population	Pop. Rank	County	Smoking Rate 2014	Smoking Rank
Las Vegas	619,360	29	Clark	18%	21
Oklahoma City	622,793	27	Oklahoma Co	18%	21
Columbus	835,957	15	Franklin	19%	24
Memphis	656,861	23	Shelby	21%	25
Nashville	644,014	25	Davidson	22%	26
Detroit	680,250	18	Wayne	22%	26
Louisville	613,599	30	Jefferson	22%	26
Indianapolis	848,788	14	Marion	22%	26
Philadelphia	1,560,297	5	Philadelphia Co	23%	30

Source: U.S. Census Bureau, 2015 estimates, and 2016 County Health Rankings, which calculate smoking rates using 2014 BRFSS data.

Even among large Midwestern cities, Indianapolis/Marion County does not fare well. Chicago moved up to the middle third of big cities in 2014; Detroit and Indianapolis/Marion County tied for last among Midwest cities (Table 6). [38]

Table 6 Smoking Rates in Largest Midwestern Cities [38]

City	Population	Pop. Rank	County	Smoking Rate 2014	Smoking Rank
Chicago	2,722,389	3	Cook	16%	15th
Columbus	835,957	15	Franklin	19%	23rd
Detroit	680,250	18	Wayne	22%	25th
Indianapolis	848,788	14	Marion	22%	30th

(Note: Indianapolis' smoking rate improved by 2 percentage points between 2013 and 2014, but this is likely due to a change in the CDCs statistical procedures.)

Smoking is a known risk factor for adverse birth outcomes. The Marion County 2014 Community Health Assessment found that [39]:

- The county's maternal smoking rate exceeded the Healthy People 2020 objective by 10 times and was nearly 40% higher than the national rate (14.5% vs. 10.4%).
- Maternal smoking was associated with 24.6% of all low birth weight births and 35.3% of low birth weight births among white mothers.
- Maternal smoking was associated with 19.6% of all preterm births and 28% of preterm births among white mothers.

Although the rates are still high, the prevalence of smoking during pregnancy and related negative birth outcomes appear to be trending downward (Table 7). Still, white women who were pregnant were much more likely to smoke than black or Hispanic women, a trend that has persisted since at least 2008. [40]

Table 7 Adverse Health Outcomes/Smoking Rates for Pregnant Women, Aged 18-34 [40]

Pregnant Women Aged 18-34	2008	2009	2010	2011	2012	HP 2020
Low birth weight (LBW)	9.5%	10.3%	9.8%	9.5%	9.1%	7.8%
Very low birth weight (VLBW)	1.8%	2.3%	2.1%	2.1%	1.9%	1.4%
Prematurity	11.3%	11.7%	10.2%	10.2%	10.2%	11.4%
Smoking during pregnancy	16.6%	16.3%	16.6%	15.7%	15.3%	◊ 98.6%
White, non-Hispanic	25.0%	24.4%	24.8%	23.0%	23.3%	◊ 98.6%
Black, non-Hispanic	13.5%	12.4%	13.5%	12.5%	12.6%	◊ 98.6%
Hispanic	2.5%	3.3%	2.7%	3.7%	2.7%	◊ 98.6%

◊HP Goal: 98.6% of women will abstain from smoking in pregnancy [41].

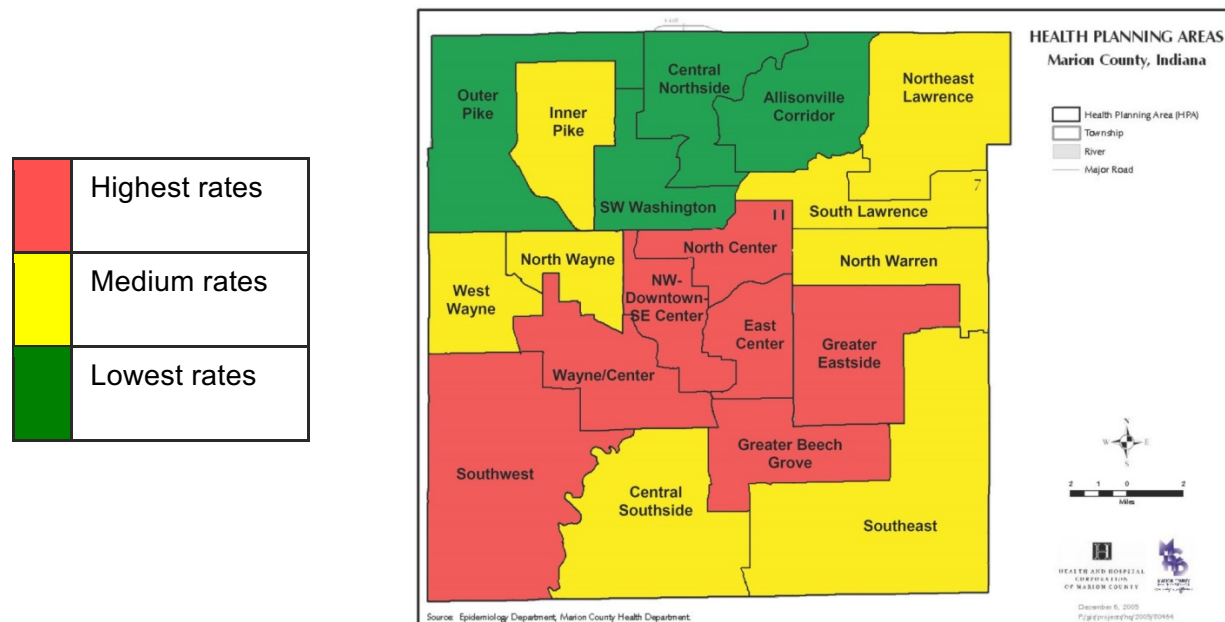
Smoking among young adults in Marion County (aged 18-34) was highest among whites who had ever been diagnosed with depression, according to the Marion County 2014 Community Health Assessment. This finding is consistent with the prevalence of smoking in people with mental illness (page 5). As might be expected, smoking among blacks was associated with elevated rates of asthma and high blood pressure (Table 8). [42]

Table 8 Smoking Rates/Prevalence of Adverse Health Conditions, Adults 18-34 [42]

Adults (18-34)	All	White (n=334)	Black (n=207)	Latino (n=148)	Other (n=57)
Current smoker	28%	37.3%	20.6%	14.4%	34.4%
Ever diagnosed with:					
Depression	17%	21.7%	12.7%	14.3%	16.0%
Current asthma	11%	10.4%	15.1%	6.2%	15.0%
High blood pressure	9.7%	8.9%	12.4%	7.0%	11.5%

Smoking varies geographically in Marion County (Figure 5) and is most prevalent in the Central and Southwest parts of the county (red areas). Lowest rates are in the Northwest and North Central parts of the county (green areas). Intermediate rates are found in the Eastern and Southern borders, and in pockets of the West. [43]

Figure 5 Highest Smoking Rates by Marion County Health Planning District [43]



Data courtesy of the Marion County Public Health Department, Epidemiology Division, 2015.
Graphic by Tarik Rabie, MPH

Secondhand Smoke Exposure

Marion County is covered by a comprehensive smoke-free air law, which protects 95.9% of the county population in their workplace, as opposed to the state's weaker smoke-free law, which only protects 29.1%. [44] However, the Marion County Community Health Assessment found that one in five youths aged 12 to 17 (20%) was still exposed to tobacco smoke in his or her own home. [45]

Indiana and Marion County Health Indices

Tobacco use negatively affects nearly every organ in the body [46] and plays an important role in several chronic and potentially fatal conditions. Table 9 provides a comparison of health indices for selected smoking-related diseases in Marion County and the State of Indiana. [44]

In all categories, Marion County exceeds the state's overall rates. These include 1) lung cancer incidence and mortality, 2) heart disease hospital admissions and mortality, 3) stroke hospitalization and mortality, 4) chronic lower respiratory disease mortality, and 5) asthma hospitalizations, particularly child asthma hospitalizations.

Table 9. Selected Health Indices, Marion County and Indiana	
Lung Cancer Incidence Rate (2009-2013)	
Lung cancer, new cases per 100,000 population (age-adjusted)	
Marion County	79.7
Indiana	74.3
Source: Indiana State Cancer Registry	
Lung Cancer Mortality Rate (2014)	
Lung cancer deaths per 100,000 population (age-adjusted)	
Marion County	59.5
Indiana	53.2
Source: Indiana State Cancer Registry	

Table 9. Selected Health Indices, Marion County and Indiana, continued	
Heart Disease Hospitalization (2014)	
Hospital admissions per 10,000 population (age-adjusted)	
Marion County	84.0
Indiana	81.5
Source: Indiana State Department of Health, Epidemiology Resource Center	
Heart Disease Mortality (2014)	
Heart disease deaths per 100,000 population (age-adjusted)	
Marion County	184.5
Indiana	181.9
Source: Indiana State Department of Health	
Stroke Hospitalization (2014)	
Stroke hospital admissions per 10,000 population (age-adjusted)	
Marion County	24.7
Indiana	20.9
Source: Indiana State Department of Health, Epidemiology Resource Center	
Stroke Mortality (2014)	
Stroke deaths per 100,000 population (age-adjusted)	
Marion County	42.3
Indiana	41.7
Source: Indiana State Department of Health	

Table 9. Selected Health Indices, Marion County and Indiana, continued	
Chronic Lower Respiratory Disease Mortality (2014)	
Chronic lower respiratory disease deaths per 100,000 population (age-adjusted)	
Marion County	61.0
Indiana	54.0
Source: Indiana State Department of Health	
Asthma Hospitalization (2014)	
Asthma hospital admissions per 10,000 population (age-adjusted)	
Marion County	18.5
Indiana	10.5
Source: Indiana State Department of Health, Epidemiology Resource Center	
Child Asthma Hospitalization (2014)	
Asthma emergency room visits among children 5 to 17 per 10,000 population	
Marion County	25.9
Indiana	8.5
Source: Indiana State Department of Health, Epidemiology Resource Center	
All data accessed on 7/7/2016 from indianaindicators.org Copyright © 2016 Indiana INdicators. All rights reserved.	

Summary – Data and Trends

Tobacco use in Indiana and Marion County has not decreased as rapidly as many other states and large cities over the past five years. Indiana ranks 44th of 50 states in adult smoking rates, which have been a major factor in its declining health status ranking (41st in 2015, down from 26th in 1991). Smoking rates in Indiana actually increased by 1% for 2014. [16]

Likewise Indianapolis/Marion County has lagged behind most big cities in reducing smoking. Of the top 30 big cities, it ranks 14th in population size, but its smoking rate is only 1 percentage point higher than the 30th ranked city. [38] Indianapolis and Detroit tied for last place among

Midwest cities (22%). The Marion County rate decreased by 2 percentage points in 2014, but this is likely related to a change in statistical procedures at the CDC. [38]

Failure to reduce smoking rates in the state and Marion County have resulted in excess illness and death, higher health care costs and reduced productivity among its citizens. [11,14,15] Despite a business friendly tax climate, these excess costs make Indiana less attractive for businesses that might relocate here, bringing jobs and enhancing the state's economy.

The Business Case for Investment in Tobacco Control

The business community is becoming increasingly aware of the impact that tobacco has on lost profits from decreased productivity and ever-increasing health insurance expenditures. Recognizing that health care costs are second only to payroll expenditures for most businesses, more companies are looking at health rankings when deciding where to locate, and in most of those rankings — from smoking rates to infant mortality — Indiana ranks near the bottom. The Wellness Council, a nonprofit arm of the Indiana Chamber of Commerce, has issued a plea for Hoosiers to “Eat right, move more, and avoid tobacco” as a strategy to keep the state's economy humming. [47]

Public health agencies and advocates have a vital role to play in supporting these aspirations from the private-sector business community. Public and private spending on tobacco prevention and cessation has predictable economic benefits that can improve the state's business climate. A 1% decrease in adult and youth smoking in Indiana is the equivalent of 50,000 fewer smokers, 830 fewer pregnant smokers, 3,600 fewer high school smokers, and 15,800 kids alive today who will not become addicted to tobacco in their lifetime. [48] Over a five-year period following a 1% drop in the smoking rate, there would be 4,160 fewer smoking-affected births, at a savings of \$8.3 million in medical expenses. Five-year savings from heart attack and stroke would be \$31.6 million. [48]

It is commonly believed that it takes many years to see a return on investment in smoking cessation interventions. With the exception of cancer (which can develop over several years), the risks for smoking related diseases actually begin to change quickly after quitting. The risk of heart attack and stroke drop by about half after a year without smoking [49, 50]; a pregnant woman's the risk of having a low-birth-weight infant due to smoking nearly evaporates if she quits in the first trimester [51].

Individual health status isn't the only factor that shows immediate improvement when a smoker quits; health care costs rapidly follow suit. A study evaluating the Massachusetts Medicaid population found net savings from reduced hospitalizations for cardiovascular conditions within two years of starting a statewide smoking cessation program, producing a return on investment of \$3.12 for every \$1.00 spent. [52] A 2016 study from the University of California, San Francisco's Center for Tobacco Control Research and Education found that a 10 % decrease in smoking nationally would be followed by a \$63 billion decrease in total health care costs in the next year, and that savings would continue in the short term. [53]

USCF researchers also estimated each state's health care costs (or savings) related to their smoking rate being above (or below) the national average. The excess cost to Indiana, with a

rate of 22.9%, was \$1.702 billion annually. [54] No state had more excess smoking expenditures than Indiana except Kentucky, with \$1.723 billion. By contrast, the state of Utah, with the lowest smoking rate of 9.7%, had an annual health care cost savings of \$1.295 billion. [54]

A common argument against tobacco control policy is that it eliminates jobs and harms the state's economy. However, tobacco growing has declined sharply since 1997, a trend that is unlikely to reverse itself for at least two reasons: 1) the demand for tobacco products has decreased and is unlikely to return to previous levels; and 2) manufacturers of tobacco products are increasingly purchasing tobacco grown in foreign countries. [55]

Farming in general supports about 190,000 jobs in Indiana, which includes production processing and other related activities [56]. The number of tobacco farming jobs can be roughly estimated by multiplying the percentage of total tobacco farms in Indiana (0.7%) by 190,000, about 1,300 jobs. Most tobacco farming in Indiana occurs in the southern-most part of the state, where economic opportunities may be more limited than other regions.

As the market for tobacco decreases, some farmers are replacing their tobacco crop with stevia plants, a source of sugar substitute [57]. Stevia grows in similar soil and climates as tobacco, and can be produced using the same equipment and similar processes. The Food and Drug Administration has recognized that extracts from the stevia herb are generally safe for human consumption.

Given that tobacco is an increasingly smaller slice of Indiana's agricultural market, that the number of people employed is shrinking due to fewer tobacco farms, and that a substitute crop has become available, the argument for not enacting tobacco control policies because of harm to jobs and the economy is steadily losing ground.

If tobacco could be completely eliminated as a consumer product there would, of course, be economic winners and losers. Some jobs would be lost, and others would be created to replace them. However, a 2005 Ball State University study [58] concluded that if tobacco were not produced or consumed in Indiana, the net result would be an economic gain for the state. The study projected that 175,000 more Hoosier jobs would exist, aggregate personal income would be \$28.7 billion higher, resulting in an after-tax increase of 7%, for a yearly gain of \$108 per person, and the state's population (and, therefore, the tax base) would increase by 500,000 people, with about half that gain, or 220,000 people, moving into Indiana from other states. [58]

What Can Be Done?

Over the past 50+ years, since the Surgeon General first announced that smoking was directly related to lung cancer [2], an unprecedented body of evidence has amassed demonstrating the damage to health and economic well-being from tobacco use. Interventions have been thoroughly evaluated for effectiveness, and economic analyses conducted to determine the cost savings that result. In 2014, the Centers for Disease Control and Prevention published [*Best Practices for Comprehensive Tobacco Control Programs*](#) [59], which included evidence-based recommendations and cost estimates for interventions in 5 broad categories to reduce tobacco use in each state (see Appendix for Executive Summary and Recommendations for Indiana). In

the following section, three key strategies will be highlighted: raising the price of tobacco, raising the legal smoking age, and adequately funding the state tobacco control program.

Effective Solutions to the Tobacco Use Problem

Raising the Price of Tobacco

Increasing the price of tobacco products is the single most powerful tool available for curtailing the consumption of cigarettes and it is unquestionably the most cost-effective. Numerous economic evaluations published in peer-reviewed journals have consistently shown that cigarettes are no different than any other consumer product — demand is responsive to price. As the price of cigarettes goes up, the sale of cigarettes goes down. [48] And while tobacco companies argue publicly that raising the tax on cigarettes would do nothing to reduce smoking, their own internal documents obtained from tobacco litigation proceedings show they believe and act otherwise. [30, 61, 62, 63, 64, 65, 66] Interestingly, the largest share of tobacco companies' marketing budgets — \$7.8 billion (85%) — goes for price discounts paid to retailers and for coupons redeemable at the point of sale. [67] These expenditures are aimed at reducing the price of cigarettes to consumers and are testimony to the tobacco industry's understanding of the powerful effect that price has on consumer demand for tobacco products.

The tobacco industry push back against raising the tax on cigarettes frequently includes the assertion that tax increases cause a rise in illicit tobacco markets. In fact, they do. But a recent study by the Institute of Medicine shows that tobacco industry claims have been exaggerated and that federal and state governments have the means available to control the problem. [68] In 2013, Minnesota increased its tax by \$1.60 per pack amid claims by tobacco companies that it would generate illicit trade. In fact after Minnesota increased the tax on cigarettes, state cigarette tax collections went up over 50% in the following year despite the fact that cigarette sales declined by 61.8 million packs (a 26% drop). [68] And there was little growth in revenue to neighboring states where cigarette taxes remained lower. [68]

Because tobacco purchases are “price-elastic,” there is a clear dose-response relationship between tax-induced price increases and demand. For every 10% rise in the price of cigarettes, overall cigarette consumption goes down 3 to 5% [67, 69, 70, 71, 72, 73] and smoking among pregnant women goes down 7%. [74] Responsiveness to price is most pronounced among males, Blacks, Hispanic, and lower-income smokers. [67, 72, 75, 76]

The tobacco industry sometimes claims that raising the tobacco tax will not produce additional revenue because sales of tobacco will decline. In fact, although tobacco sales have declined sharply in every state that has raised its cigarette tax significantly, [77] state revenues have gone up in every case (Table 10).

Table 10 Impact of state tax increases on cigarette sales and state revenues

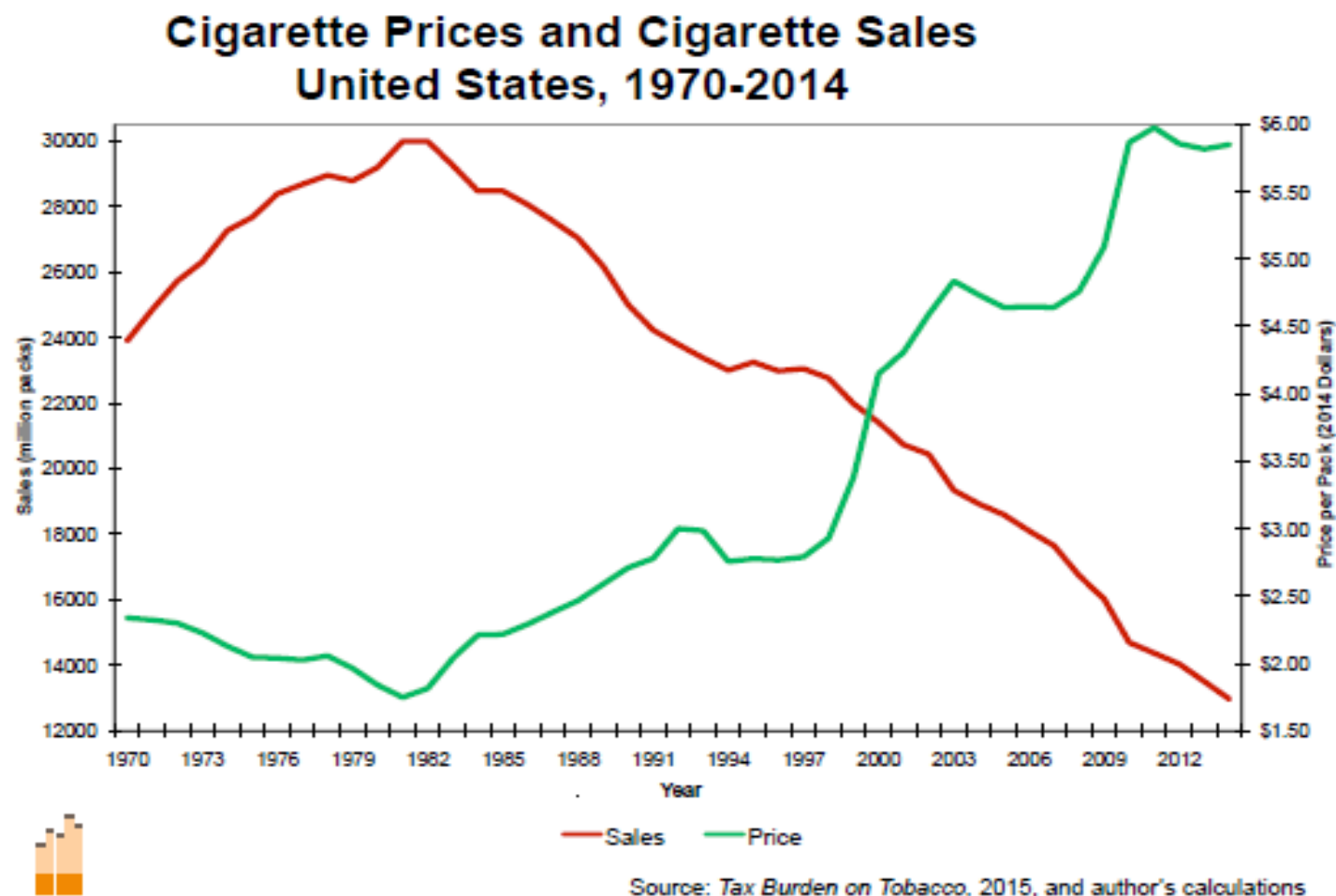
State	Effective Date	Tax Increase Amount (per pack)	New State Tax Rate (per pack)	State Pack Sales Decline	Nationwide Pack Sales Trend	Revenue Increase	Gross New Revenues (millions)
Arizona	12/8/06	82¢	\$2.00	- 32.5%	- 4.4%	+ 13.6%	\$44.5
Arkansas	3/1/09	56¢	\$1.15	- 27.8%	- 10.2%	+ 33.5%	\$46.5
Delaware	7/31/07	60¢	\$1.15	- 35.1%	- 4.9%	+ 35.1%	\$31.8
Washington, DC	10/1/08	\$1.00	\$2.00	- 25.9%	- 7.0%	+ 57.3%	\$13.2
Florida	7/1/09	\$1.00	\$1.339	- 27.4%	- 8.4%	+ 193.2%	\$828.8
Hawaii	7/1/09	60¢	\$2.60	- 11.3%	- 8.4%	+ 14.5%	\$15.1
Illinois	6/24/12	\$1.00	\$1.98	- 31.2%	- 2.3%	+ 39.0%	\$229.2
Iowa	3/15/07	\$1.00	\$1.36	- 30.6%	- 4.7%	+ 140.2%	\$128.0
Maryland	1/1/08	\$1.00	\$2.00	- 27.1%	- 4.2%	+ 45.8%	\$126.9
Massachusetts	7/1/08	\$1.00	\$2.51	- 20.3%	- 5.3%	+ 32.2%	\$137.2
Minnesota	7/1/13	\$1.60	\$2.83	- 24.0%	- 4.7%	+ 56.0%	\$204.1
Mississippi	5/15/09	50¢	\$0.68	- 22.8%	- 9.5%	+ 188.3%	\$88.9
New Mexico	7/1/10	\$0.75	\$1.66	- 7.8%	- 2.6%	+ 67.5%	\$37.5
New York	6/3/08	\$1.25	\$2.75	- 15.2%	- 5.8%	+ 40.3%	\$377.4
New York	7/1/10	\$1.60	\$4.35	- 24.8%	- 2.6%	+ 18.8%	\$244.6
Rhode Island	4/10/09	\$1.00	\$3.46	- 14.7%	- 11.1%	+ 15.1%	\$17.8
South Carolina	7/1/10	50¢	\$0.57	+ 7.8%	- 2.6%	+ 434.2%	\$116.8
South Dakota	1/1/07	\$1.00	\$1.53	- 25.8%	- 4.9%	+ 115.4%	\$31.8
Texas	1/1/07	\$1.00	\$1.41	- 21.0%	- 4.9%	+ 191.7%	\$1,003.7
Utah	7/1/10	\$1.005	\$1.70	- 24.5%	- 2.6%	+ 85.0%	\$47.0
Vermont	7/1/06	60¢	\$1.79	- 15.2%	- 3.0%	+ 27.9%	\$13.2
Washington	5/1/10	\$1.00	\$3.025	- 20.5%	- 3.9%	+ 17.0%	\$62.0
Wisconsin	1/1/08	\$1.00	\$1.77	- 15.0%	- 4.2%	+ 93.9%	\$286.0

Sources: Orzechowski & Walker, *Tax Burden on Tobacco* monthly data of gross tax revenues. U.S. Alcohol and Tobacco Tax and Trade Bureau. Consumption declines and revenue increases are for the 12 months before and after the tax increase, using monthly data because some tax rate increases are implemented in the middle of the fiscal year. Only gross tax revenues are available on a monthly basis, therefore to be consistent, the chart above reflects gross tax revenues for all tax increases. Nationwide consumption declines are for the 50 states and DC. Trends for rate increases after January 2008 include the impact of the 61.66-cent federal cigarette tax increase (effective April 1, 2009). The increased pack sales in South Carolina is largely due to a surge in pack sales in July 2010 because its new tax rate was not implemented until August 2010.

Smoking is a complex behavior governed by many influences, and it is hard to draw unambiguous inferences about the causal nature of any single factor. However, as depicted in Figures 6A through 6D, there is an unmistakable relationship between upward trends in cigarette pricing and downward trends in overall cigarette consumption.

As shown in Figure 6A, during the years 1970 to 2014, as the price of cigarettes rose in the United States from just under \$2.50 per pack to nearly \$6.00 (expressed in 2014 dollars), there was a corresponding drop in the cigarette consumption. When the average price of cigarettes was at its lowest point in 1981, Americans consumed roughly 30 billion packs, while in 2014, when the average price had risen to just under \$6.00 per pack, consumption dropped below 14 billion packs.

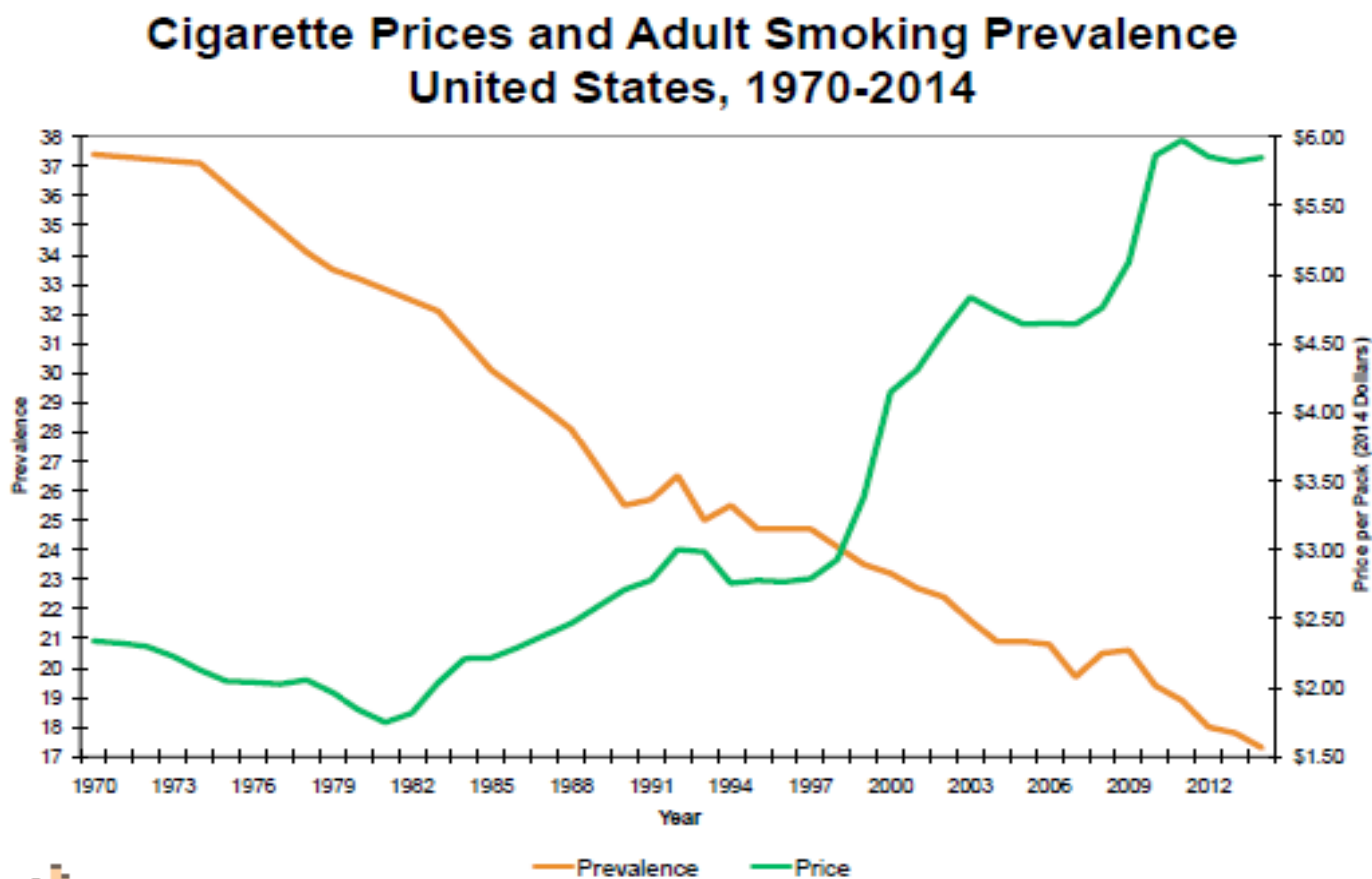
Figure 6A Trends in cigarette prices and cigarette consumption



Courtesy of Frank J. Chaloupka. Tobacconomics. Economic Research Informing Tobacco Control Policy. University of Illinois at Chicago. Presented at the Society for Research on Nicotine and Tobacco. March 2, 2016.

Figure 6B illustrates that price has had a similar reciprocal relationship to smoking prevalence in the United States.

Figure 6B Trends in cigarette prices and smoking prevalence

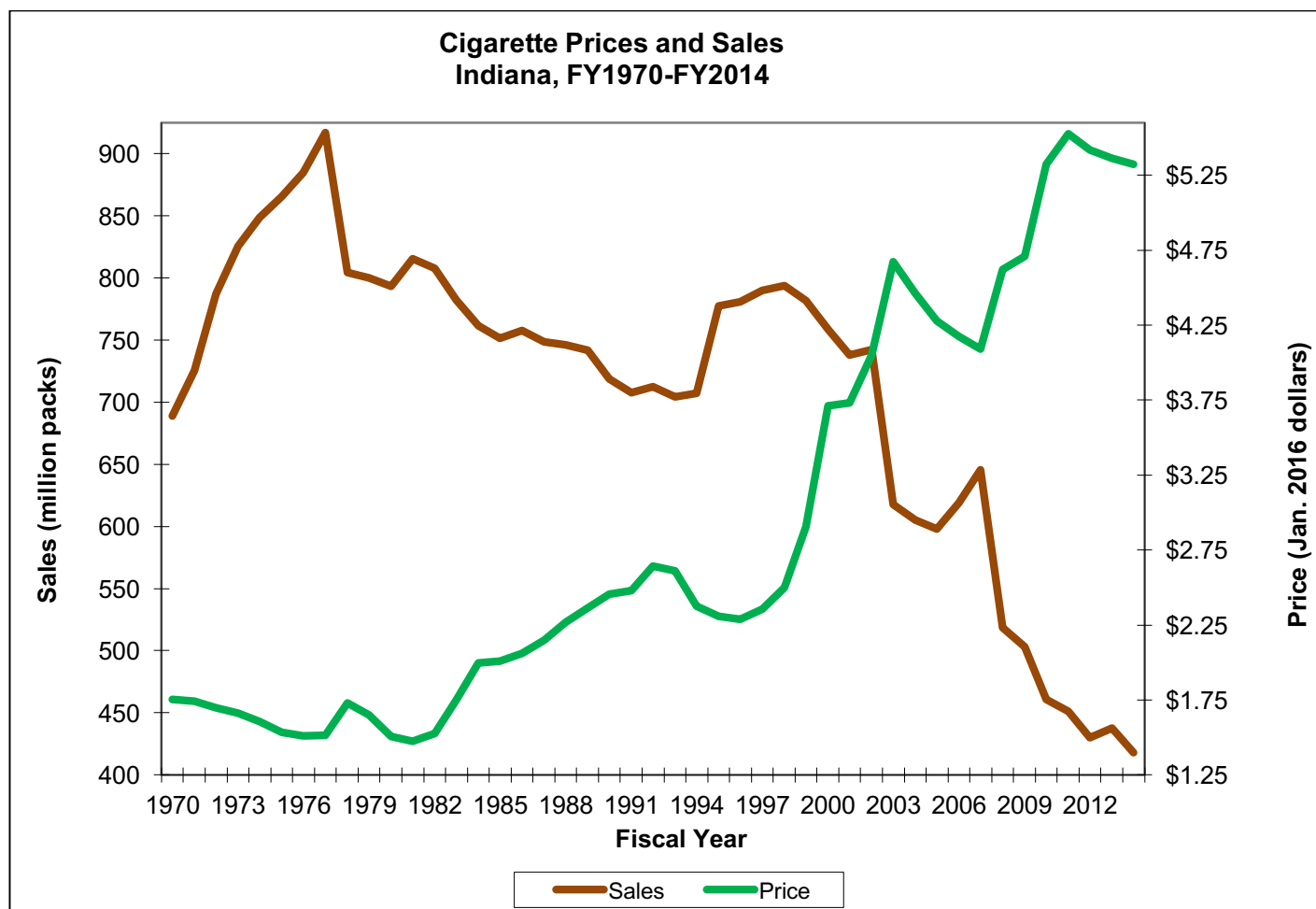


Source: NHIS, *Tax Burden on Tobacco*, 2015, and author's calculations

Courtesy of Frank J. Chaloupka. Tobacconomics. Economic Research Informing Tobacco Control Policy. University of Illinois at Chicago. Presented at the Society for Research on Nicotine and Tobacco. March 2, 2016.

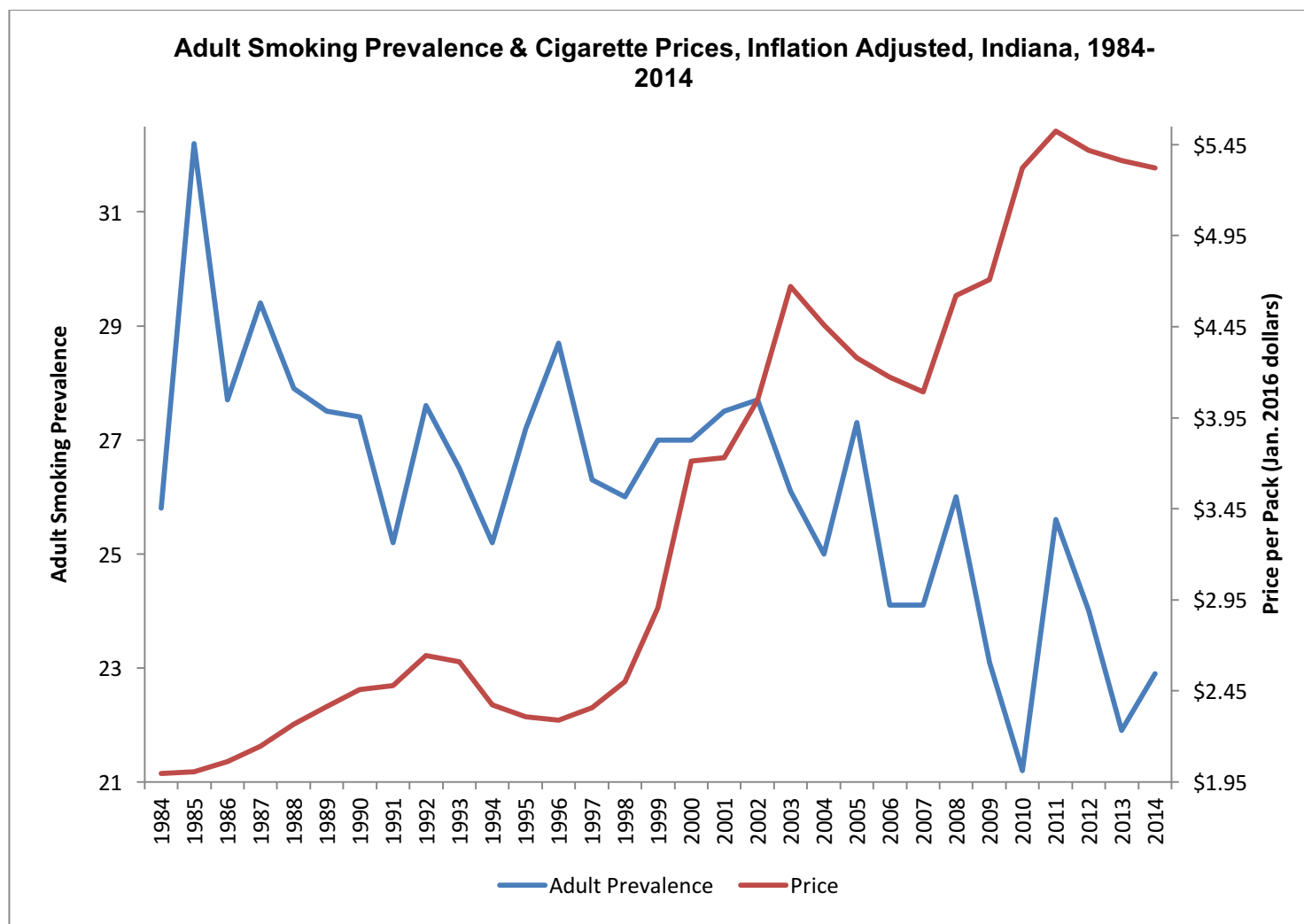
Figures 6C and 6D (next page) show the relationships between price vs. pack sales and price vs. smoking prevalence rate for Indiana. These graphs show that price-elasticity relationships are similar in Indiana compared to the nation as a whole.

Figure 6C *Indiana trends in cigarette prices and cigarette consumption*



Courtesy of Frank J. Chaloupka. Tobacconomics. Economic Research Informing Tobacco Control Policy. University of Illinois at Chicago. March, 2016.

Figure 6D Indiana trends in cigarette prices and smoking prevalence



Courtesy of Frank J. Chaloupka. Tobacconomics. Economic Research Informing Tobacco Control Policy. University of Illinois at Chicago. March, 2016.

It may seem counter-intuitive to those who reason that raising tobacco taxes should cause revenue to go down as more people quit smoking. But the data contradict this intuition. [78] Here's what the data show:

1. Significant tobacco tax increases have always increased state revenues after they are enacted. As a matter of historical fact, state tobacco tax increases have been associated with substantial net new revenue in every state that has raised the cigarette tax significantly. [78] Because of the addictive nature of nicotine, the decrease in the smoking rate after a significant tax increase is not large enough to offset the increase in revenue to the state. In the longer term, as smoking rates continue to decline, existing state revenues are freed up as declining smoking rates are more than offset by larger declines in smoking-related medical costs to the state. Consider, for example, that an increase in the tobacco tax has the largest impact on reducing smoking rates among low-income smokers and pregnant women — the same populations for which smoking reductions produce the largest direct savings for the state in the form of reduced Medicaid expenditures. Additionally, smokers who quit typically use their savings to purchase other taxable goods and services that raise revenue for the state and strengthen the state's economy. When all these factors are considered together, the net result is a gain in state revenue that is sustainable over time.
2. Tobacco taxes are a reliable source of state revenue. In contrast to other revenue sources such as sales taxes, and taxes on personal income and corporate profits that vary from year-to-year because of recessions and economic slowdowns, tobacco tax revenues tend to be more predictable and less volatile. The data show that tobacco sales decline gradually and predictably in the face of tax increases [78], probably due, again, to the highly addictive nature of tobacco products, giving states a long lead time to adjust.
3. Strategies exist to further stabilize revenue streams from tobacco taxes. Revenues from cigarette taxes can be stabilized further by levying the tax equally on all tobacco products, not just cigarettes. This ensures that the state will not lose revenue when smokers switch from cigarettes to other tobacco products that are taxed at a lower rate (or not taxed at all). Revenues can also be stabilized by taking steps that are known to reduce smuggling, illicit trade and other forms of tax evasion. These steps include the use of high-tech stamps, laws to prevent internet tobacco sales and increased enforcement efforts [79,80]

The 2000 U.S. Surgeon General's Report [81] concluded that increasing the tobacco tax results in "substantial long-term improvements in health" and is one of the most effective tobacco prevention and control strategies that can be implemented. After evaluating two comprehensive reviews on the impact of price on cigarette consumption, the 2014 Surgeon General's Report [4] determined that: (1) Increases in cigarette prices lead to a substantial reduction in cigarette smoking; (2) Increases in price reduce not only the prevalence of smokers, but also the number of cigarettes consumed per smoker; (3) The smoking behavior of both youth and young adults is more responsive than that of adults to price changes; (4) Price responsiveness is greatest among low-income smokers; (5) State excise taxes provide additional revenue for states.

Indiana currently levies a \$0.995 tax on a pack of cigarettes (Table 11), placing the state 34th among all the states, and below the neighboring states of Illinois (\$1.98), Michigan (\$2.00), Ohio (\$1.60), and Wisconsin (\$2.52).

Table 11 Cigarette excise tax rate and per capita cigarette sales in Indiana compared to the highest 10 and lowest 10 states

State	State Cigarette Excise Tax (Per Pack) ¹	Per Capita Cigarette Sales (Packs) ²	Rank (by tax)
New York	\$4.35	15.4	1
Rhode Island	\$3.75	36.7	2
Massachusetts	\$3.51	27.1	3
Connecticut	\$3.40	30.1	4
Hawaii	\$3.20	25.4	5
Vermont	\$3.08	40.4	6
Washington	\$3.03	18.6	7
Minnesota	\$2.90	31.4	8
New Jersey	\$2.70	29.3	9
Wisconsin	\$2.52	39.9	10
United States Average	\$1.59	42.4	
Indiana	\$0.995	63.6	34
Wyoming	\$0.60	56.4	42
Idaho	\$0.57	40.8	43
South Carolina	\$0.57	58.9	44
West Virginia	\$0.55	97.4	45
North Carolina	\$0.45	56.7	46
North Dakota	\$0.44	75.8	47
Alabama	\$0.43	61.7	48
Georgia	\$0.37	49.0	49
Virginia	\$0.30	67.0	50
Missouri	\$0.17	82.6	51

1. Taxes are those that were in effect as of August 1, 2015.
Henry J. Kaiser Family Foundation [79]
<http://kff.org/other/state-indicator/cigarette-excise-tax/#table>
2. Tax-paid per capita sales for the fiscal year ending June 30, 2014.
Orzechowski & Walker. *The Tax Burden on Tobacco: Historical Compilation*.
Vol. 49, Table 11, p. 46, 2014. [78]

The average state tax is \$1.59, which is in addition to a federal tax of \$1.01 per pack. Increasing the Indiana tax on cigarettes to at least the average of all other states (\$1.59 per pack) would translate into Hoosier lives saved from tobacco-related diseases. [82] From a public health perspective, a tax-induced price increase is tantamount to a free smoking intervention. Even if the new revenue is used for purposes other than tobacco control, the tax itself acts as a public health intervention, exerting downward pressure on cigarette consumption, lowering the prevalence and intensity of smoking and reducing smoking-related drag on the state's economy, even without additional public health spending. From a government perspective the tax produces a positive revenue stream.

As the tax is increased, the tobacco industry would likely counter with discount coupons and other price-lowering tactics designed to blunt the effect of the tax. Anticipation of this counter move by tobacco companies provides further justification for levying a sufficiently heavy tax to affect the price paid by the consumer even after accounting for tobacco company discounts. Minimizing the effects of discounting is particularly important in the prevention of smoking in young people, one of the most price-sensitive groups. [83]

Here is a rationale for thinking about an appropriate range for a tax increase. Because of the higher burden that tobacco exacts on the health of Hoosiers and the economy of Indiana in comparison to most other states, a large boost in the Indiana tax would be justified. The highest cigarette tax jurisdiction (taking all federal, state and local taxes into consideration) is Chicago with an overall tax of \$7.17 per pack. [84] Using the Chicago tax as an anchor on the high end and Wisconsin's tax as a threshold for entry into the top 10 states, we would suggest targeting a tax increase for Indiana somewhere in the range of \$1.53 to \$6.17. Recognizing that an increase as high as \$6.17 is probably politically unrealistic, an increase in the range of \$1.53 to \$3.00 may have the best chance of passage. An increase of at least \$1.53 would raise the tax from its current level of \$0.995 to \$2.525 per pack, placing Indiana in the top 10, just above Wisconsin, which is currently in 10th place, and above all of Indiana's neighboring states.

Raising the Legal Age for Smoking

Most states in the U.S. have laws that stipulate the minimum legal age (MLA) for purchasing tobacco as 18 years of age; in four states, the age is 19. [85] The first state laws establishing MLA appeared in the 1880s; by 1920, half of states had set MLAs of at least 21 years. After 1920, lobbying by tobacco industry resulted in their erosion to 16-18 years. By the 1980s, 2 decades after the surgeon general declared that smoking as a cause of lung cancer, the industry came to view higher MLAs as a critical threat to their business, and that recruiting new young smokers was necessary for its survival. [85]

Raising the legal age for purchase of tobacco products is an idea whose time has come. [86] As of September 2015, more than 80 cities in eight states have raised the minimum legal sales age for tobacco products. Examples of municipalities and states that have either raised or are considering raising the legal age for tobacco purchase include:

1. Kansas City, which raised the age to 21 in November of 2015 by an 11 to 1 vote of City Commissioners. <http://www.kmbc.com/news/kc-raises-minimum-age-for-tobacco-vaping-material-sales-to-21/36548762>

2. New York City, which raised the minimum age to 21 in November of 2013.
https://www.health.ny.gov/prevention/tobacco_control/current_policies.htm
3. Hawaii, which raised the age to 21 on January 1, 2015.
4. Chicago is considering raising the minimum age for purchasing tobacco to 21
<http://chicago.suntimes.com/news/7/71/1247762/emanuel-hopes-raise-tobacco-buying-age-21>
5. Boston is considering 21 as legal age for tobacco sales.
6. Massachusetts, Maine, Washington and New Jersey, whose legislatures are all considering raising the legal smoking age during the 2016 sessions.
<http://www.seattletimes.com/opinion/editorials/raise-smoking-age-to-21-in-washington/>
7. California became the second state after to raise the legal smoking age to 21 on May 5, 2016. <http://www.npr.org/sections/health-shots/2016/05/05/476872674/california-raises-age-of-tobacco-purchase-to-21-and-tightens-vaping-rules>

There are significant public health benefits to be gained from raising the legal age because some smokers would never take up the habit if access were delayed until after their teen-age years when decisions are still heavily susceptible to poor impulse control and peer pressure. [85] The Institute of Medicine found that 90% of daily smokers first used cigarettes before the age of 19 and that a legal age of 21 would “likely prevent or delay initiation of tobacco use by adolescents and young adults.” [87] It has been estimated that smoking rates would fall to 12% if the legal age was raised to 21. [87]

Adequately Funding State Tobacco Programs

Statewide tobacco prevention and control programs are an important component of an effective strategy to reduce tobacco use. According to the Centers for Disease Control and Prevention (CDC), effective programs should have five primary functions, including: 1) state and community interventions, 2) mass reach health communication campaigns, 3) cessation interventions, 4) surveillance and evaluation, and 5) infrastructure/ administration/management. Evidence has shown that states who have adequately funded and implemented programs are more likely to reduce their tobacco use rates. [33]

These best practice functions are also interrelated with each other and most effective when implemented simultaneously. For example, research has shown that one-third of underage experimentation with smoking is attributable to tobacco-company advertising. [88] Today’s average 14-year-old has been exposed to more than \$20 billion in tobacco-related imagery, advertising, and promotional messaging since age six. [89]. To counteract the impact of tobacco-industry spending on advertising and marketing in Indiana, the state should substantially increase its spending on counter-marketing and mass communications campaigns. Such campaigns are particularly effective when they are implemented with expanded smoking cessation services to meet the newly created demand. Cessation intervention could be expanded by raising awareness of health care professionals and health care system leaders about best practices for smoking cessation and insurance coverage for treatment options that support tobacco users’ efforts to quit. Community coalitions can ensure cessation services are available, as well as advocate for policies at the state and local level that support tobacco control, such as smoke-free laws and ordinances. [33]

Based on their research, the CDC has computed tobacco control program minimum and recommended spending levels for each of the five functions in every state. For Indiana, the levels are indicated in Table 12 [33]:

Table 12. CDC Minimum and Recommended Spending Levels for Indiana				
	Total Minimum	Total Recommended	Per Capita Minimum	Per Capita Recommended
State and Community Interventions	\$18.8 mil	23.5 mil	\$2.88	\$3.59
Mass-Reach Health Communication Campaigns	\$5.1 mil	\$7.3 mil	\$0.78	\$1.12
Cessation Interventions	\$20.6 mil	\$33.1 mil	\$3.15	\$5.06
Surveillance and Evaluation	\$4.5 mil	\$6.4 mil	\$0.68	\$0.98
Infrastructure, Admin., and Management	\$2.2 mil	\$3.2 mil	\$0.34	\$0.49
Total	\$51.2 mil	\$73.5 mil	\$7.83	\$11.24

Altogether, these functions combined have an annual cost of \$51.2 million at the minimum level and \$73.5 million at the recommended level, which computes to less than \$8 per capita, if funded at the minimum level, and \$11.24 per capita at the recommended level. The state of Indiana currently provides \$5 million in funding for its tobacco prevention and control program, about 10% of the CDC minimum recommended level. In contrast, Hoosiers pay \$589.8 million annually [14], or \$89.09 per capita (based on Indiana population of 6.62 million) in *Medicaid health care costs alone* for tobacco-related illnesses. Total medical costs for tobacco-related diseases are \$2.93 billion [14], computing to \$442.60 per capita. By funding the state tobacco control and prevention program at even the minimum recommended level, less than \$10 per capita, the state of Indiana could potentially save taxpayers millions of dollars in health care costs, and save thousands of Hoosier lives.

Conclusion

Tobacco use is indisputably causing harm to health and economic wellbeing of residents in Indianapolis/ Marion County and Indiana. The economic cost to all Hoosiers, smokers and non-smokers, is significant; for each pack of cigarettes sold, our state bears **\$15.90** in health care and lost productivity costs. [90] The health and economic costs of tobacco use are *preventable*. Now is the time for Indiana to turn the tide and regain its status as a healthy state by implementing evidence-based policies and programs to reduce tobacco use.

Tables

Table #	Title	Page #
1	<i>Indiana's Smoking Rate 2010-2015</i>	4
2	<i>Youth Responses to Tobacco Questions, YBRS 2011</i>	6
3	<i>Master Settlement Agreement Payments Compared to State Tobacco Control Budgets 2012 - 2016</i>	9
4	<i>2014 Smoking Prevalence in Marion County, Indiana and the U.S.</i>	10
5	<i>Smoking Rates in the 30 Largest Cities in the U.S.</i>	11-12
6	<i>Smoking Rates in Largest Midwestern Cities</i>	12
7	<i>Adverse Health Outcomes/Smoking Rates for Pregnant Women, 18-34</i>	13
8	<i>Smoking Rates/Prevalence of Adverse Health Conditions, Adults 18-34</i>	14
9	<i>Selected Health Indices, Marion County and Indiana</i>	15-17
10	<i>Impact of State Tax Increases on Cigarette Sales and State Revenues</i>	21
11	<i>Cigarette Excise Tax Rate and Per Capita Cigarette Sales in Indiana Compared to the Highest 10 and Lowest 10 States</i>	27
12	<i>CDC Minimum and Recommended Spending Levels for Indiana</i>	30

Figures

Figure #	Title	Page #
1	<i>Indiana Prevention Resource Center, Youth Smoking Trends</i>	5
2	<i>Relative Importance of Smoking to Indiana's Health Status</i>	7
3	<i>Indiana's Health Ranking, 1990-2015</i>	7
4	<i>Percent of Excess Deaths and Population Size in Indiana</i>	8
5	<i>Highest Smoking Rates by Marion County Health Planning District</i>	14
6A	<i>Trends in Cigarette Prices and Cigarette Consumption</i>	22
6B	<i>Trends in Cigarette Prices and Smoking Prevalence</i>	23
6C	<i>Indiana Trends in Cigarette Prices and Cigarette Consumption</i>	24
6D	<i>Indiana Trends in Cigarette Prices and Smoking Prevalence</i>	25

References

1. World Health Organization. Assessment of the Economic Costs of Smoking. 2011 http://apps.who.int/iris/bitstream/10665/44596/1/9789241501576_eng.pdf.
2. U.S. Department of Health, Education and Welfare (now Department of Health and Human Services). Public Health Service. *Smoking and Health: Report of the Advisory Committee to the Surgeon General of the Public Health Service*. Public Health Service Publication No. 1103. Superintendent of Documents. U.S. Government Printing Office, Washington, D.C 20402. 1964. <http://profiles.nlm.nih.gov/NN/B/B/M/Q/>
3. Centers for Disease Control and Prevention, National Center for Health Statistics. (May 8, 2016). Early Release of Selected Estimates Based on Data from the National Health Interview Survey, 2015. Retrieved at: www.cdc.gov/nchs/data/nhis/earlyrelease/earlyrelease201605_08.pdf.
4. U.S. Department of Health and Human Services. *The Health Consequences of Smoking: 50 Years of Progress. A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion, Office of Smoking and Health, 2014. (Printed with corrections, January 2014). <http://www.surgeongeneral.gov/library/reports/50-years-of-progress/>
5. Centers for Disease Control and Prevention. MMWR. *Current Cigarette Smoking among Adults: United States, 2005-2015*. November 28, 2014; 63(47):1108-1112. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6347a4.htm>
6. Carter BD, Abnet CC, Feskanich, et al. Smoking and Mortality: Beyond Established Causes. *New Eng J Med*. 2015;372:631-640. <http://www.nejm.org/doi/pdf/10.1056/NEJMsa1407211>
7. Warner KE, Hodgson TA, Carroll CE. Medical cost in the United States” Estimates, their validity, and their implications. *Tobacco Control*. 1999;8:290-300.
8. Xu X, Bishop EE, Kennedy SM, Simpson SA, Pechacek TF 2015. Annual healthcare spending attributable to cigarette smoking: an update *Am J Prev Med* 48; 326-33. <http://www.ncbi.nlm.nih.gov/pubmed/25498551>
9. Maciosek MV, Xu X, Butani AL, Pechacek. Smoking attributable medical expenditures by age, sex and smoking status estimated using a relative risk approach. *Prev Medicine* 2015;77:162-67. <http://www.ncbi.nlm.nih.gov/pubmed/26051203>
10. Indiana State Department of Health, *Indiana Adult Smoking*. (2015). Retrieved at: https://secure.in.gov/isdh/tpc/files/IN_Adult_Smoking_October_2015.pdf.

11. Indiana State Department of Health, *Health Effects of Secondhand Smoke*. (2014). Retrieved at: https://secure.in.gov/isdh/tpc/files/Health_Effects_of_Secondhand_Smoke_12_29_2014.pdf.
12. Campaign for Tobacco-Free Kids. *Key State-Specific Tobacco-Related Data & Rankings*, (2014). Retrieved at: <http://www.tobaccofreekids.org/research/factsheets/pdf/0176.pdf>.
13. Indiana State Department of Health, *Indiana's Plan to Reduce Infant Mortality*. (2015). Retrieved at: www.in.gov/isdh/files/2_Infant_Mortality_Indiana_Plan_Dr_Jerome_Adams.ppt.
14. Campaign for Tobacco-Free Kids. *The Toll of Tobacco in Indiana*. (2015). Retrieved at: https://www.tobaccofreekids.org/facts_issues/toll_us/indiana.
15. Indiana State Department of Health, Quitline. *Cost of Tobacco for the State & Medicaid*. (2016). Retrieved at: <http://www.in.gov/quitline/2337.htm>.
16. America's Health Rankings, *Smoking, Indiana, Rank: 44*. (2015). Retrieved at: <http://www.americashealthrankings.org/IN/Smoking>.
17. Healthy People 2020, *Adult cigarette smoking (age adjusted, percent, 18+ years)*. (2016). Retrieved at: https://www.healthypeople.gov/2020/data-search/Search-the-Data?f%5B%5D=field_topic_area%3A3510&f%255b%255d=field_topic_area%3A3510&ci=0&se=0&pop=.
18. Indiana State Department of Health, Tobacco Prevention and Cessation Commission, (2016). *Indiana Latinos and Smoking*. Retrieved at: http://www.in.gov/isdh/tpc/files/IN_Latinos_and_Smoking_12_16_2015.pdf.
19. Centers for Disease Control and Prevention, Office of Smoking and Health. (2016). *Current Cigarette Smoking Among Adults in the United States*. Retrieved at: http://www.cdc.gov/tobacco/data_statistics/fact_sheets/adult_data/cig_smoking/index.htm.
20. Indiana State Department of Health, Tobacco Prevention and Cessation Commission. (2016). *Indiana African Americans and Smoking*. Retrieved at: http://www.in.gov/isdh/tpc/files/IN_African_Americans_and_Smoking_October_2015.pdf.

21. Indiana State Department of Health, Tobacco Prevention and Cessation Commission. (2016). *Indiana Lesbian, Gay, Bisexual, and Transgender Communities and Tobacco Use*. Retrieved at: http://www.in.gov/isdh/tpc/files/LGBT_Community_and_Tobacco_Use_November_2015.pdf.
22. Indiana State Department of Health, Tobacco Prevention and Cessation Commission, (2016). *Smoking Mental Illness and Substance Abuse Disorders*. Retrieved at: http://www.in.gov/isdh/tpc/files/MH_and_Substance_Use_Disorders_October_2015.pdf.
23. Indiana Prevention Resource Center, *Youth Smoking Trends*. (2015.) Retrieved at: http://www.drugs.indiana.edu/publications/survey/indianaSurvey_2015.pdf. Pg.95.
24. Jay SJ, Torabi MR, Spitznagle MH. A decade of sustaining best practices for tobacco control: Indiana's story. *CDC Preventing Chronic Disease*. 2012;9: 110144. Accessible at: <http://dx.doi.org/10.5888/pcd9.110144>.
25. Centers for Disease Control and Prevention. *Youth Online – High School, Indiana*. (2015). Retrieved at: <https://nccd.cdc.gov/youthonline/App/Results.aspx?LID=IN>
26. Breathe Easy Indiana, *Secondhand Smoke*, (2016). Retrieved at: http://www.breatheindiana.com/Secondhand_Smoke.html.
27. America's Health Rankings. *Overall Indiana Rank: 41*. (2015). Retrieved at: <http://www.americashealthrankings.org/IN/Overall>.
28. County Health Rankings, *Indiana Health Gaps Report*, (2015). Retrieved at: <http://www.countyhealthrankings.org/health-gaps/indiana>.
29. Centers for Disease Control and Prevention. *Best Practices for Comprehensive Tobacco Control Programs — 2014*. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014. Retrieved at: www.cdc.gov/tobacco/stateandcommunity/best_practices/pdfs/2014/comprehensive.pdf
30. Rosenbaum DJ, Barnes, RL, Glantz SA. (2010). *A Few More Laps to Go: Tobacco Industry Political Influence, Public Health Advocacy and Tobacco Control Policy Making in Indiana 1893-2010*. eScholarship, University of California. Retrieved at: <http://escholarship.org/uc/item/7q6936dg>.

31. Public Health Law Center, Mitchell Hamline School of Law, *Master Settlement Agreement*. 2015. <http://publichealthlawcenter.org/topics/tobacco-control/tobacco-control-litigation/master-settlement-agreement>
32. Indiana Code 1. 4-12-4, PL 21-2000.
33. Centers for Disease Control and Prevention. *Best Practices for Comprehensive Tobacco Control Programs* — 2014. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014. Retrieved at: www.cdc.gov/tobacco/stateandcommunity/best_practices/pdfs/2014/comprehensive.pdf
34. Indiana State Department of Health. Tobacco Prevention and Cessation Division. Personal Communication. 2016.
35. Philip Morris document, “General Comments on Smoking and Health,” Appendix I in *The Perspective of PM International on Smoking and Health Initiatives*, March 29, 1985, Bates No. 2023268329/8348.
36. Indiana State Budget Agency, *FY 2014 - FY 2017 Master Settlement Agreement*. 2014. Retrieved at: http://www.in.gov/sba/files/Biennium_ProjectionsTMSF_as_of_1_13_15_Gov_Recom.pdf.
37. Indiana State Budget Agency, *FY 2012 - FY 2015 Tobacco Master Settlement Trust Fund, FY 2012 - FY 2015*. 2014. Retrieved at: http://www.in.gov/sba/files/FY_2014_Tobacco_Master_Settlement_Fund.pdf.
38. County Health Rankings and Roadmaps, Data retrieved for 30 largest cities. (2015). Retrieved at: <http://www.census.gov/> , <http://www.countyhealthrankings.org/>.
39. Marion County Community Health Assessment, *Maternal Infant and Toddler*. (2014). Retrieved at: <http://health.mchd.com/health-assessments/>, Ages 0-4, page 4.
40. Marion County Community Health Assessment, *Adverse Health Outcomes/Smoking Rates for Pregnant Women aged 18-34*. (2014). <http://health.mchd.com/health-assessments/young-adults-ages-18-34>, page 46.
41. Healthy People 2020, *Pregnancy Health and Behaviors*. 2016. Retrieved at: <http://www.healthypeople.gov/2020/topics-objectives/objective/mich-113>.

42. Marion County Community Health Assessment, *Smoking Rates/Prevalence of Adverse Health Conditions, Adults 18-34*. 2014. Retrieved at: <http://health.mchd.com/health-assessments/young-adults-ages-18-34>, page 46.
43. Marion County Public Health Department, Epidemiology Department. *Highest Smoking Rates by Marion County Health Planning District*. 2015.
44. Indiana INdicators, Selected Tobacco Related Chronic Disease Rates. (2016). Data retrieved at: <http://indianaindicators.org/CountyDashboard.aspx?c=097>.
45. Marion County Community Health Assessment, *Youths Aged 12 to 17 Exposed to Tobacco Smoke in Their Home*. 2014. Retrieved at: <http://health.mchd.com/health-assessments/Ages 12-17>, page 5.
46. Campaign for Tobacco-Free Kids, *Tobacco Overview*. 2016. Retrieved at: http://www.tobaccofreekids.org/facts_issues/tobacco_101/.
47. Network Indiana. *Wellness Council: Economy Depends on Health*. February 8, 2016. <http://indianapublicmedia.org/news/wellness-council-economy-depends-healthy-hoosiers-93525/>.
48. Campaign for Tobacco-Free Kids, *State Cessation Related Statistics & Potential Savings from Reducing Adult Smoking by One Percentage Point*. 2016. Retrieved at: <https://www.tobaccofreekids.org/research/factsheets/pdf/0163.pdf>
49. Lightwood JM, Glantz SA. Short-term economic and health benefits of smoking cessation; Myocardial infarction and stroke. *Circulation*. 1997;96:1089-1096.
50. Fichtenberg CM, Glantz SA. Association of the California Tobacco Control Program with declines in cigarette consumption and mortality from heart disease. *New Eng J Med*. 2000;343:1772-1777.
51. Lightwood JM, Phibbs CS, Glantz SA (1999) Short-term health and economic benefits of smoking cessation: low birth weight. *Pediatrics* 104: 1312–1320. PMID: 10585982.
52. Lightwood J, Glantz SA (2016) Smoking Behavior and Healthcare Expenditure in the United States, 1992–2009: Panel Data Estimates. *PLoS Med* 13(5): e1002020. doi:10.1371/journal.pmed.1002020.
53. Community Preventive Services Task Force. Reducing tobacco use and secondhand smoke exposure: Reducing out-of-pocket costs for evidence-based cessation treatments. Task force findings. August 2012. <http://www.thecommunityguide.org/tobacco/outofpocketcosts.html>

54. Fernandez E. *Health Care Costs Drop Quickly After Smokers Quit; UCSF Study Estimates How Much Smoking Reductions Can Save Each State*. (May 10, 2106). Retrieved at: <https://www.ucsf.edu/news/2016/05/402721/health-care-costs-drop-quickly-after-smokers-quit>.
55. Campaign for Tobacco-Free Kids. (2014). *Tobacco-Growing States in the USA*. 2016. Retrieved at: <https://www.tobaccofreekids.org/research/factsheets/pdf/0125.pdf>.
56. Indiana Economic Development Corporation, *Agribusiness*. 2016. Retrieved at: <http://www.iedc.in.gov/industries/agribusiness>.
57. Bloomberg Business, *Some Tobacco Farmers Have a Sweet Tooth*. 2016. Retrieved at: <http://www.bloomberg.com/bw/articles/2013-10-03/tobacco-farmers-switch-to-stevia-the-sweetener-ingredient>.
58. Barkey PM. *The economic impact of tobacco use in Indiana: Final report*. Bureau of Business Research. Ball State University. August 2005.
59. Centers for Disease Control and Prevention. *Best Practices for Comprehensive Tobacco Control Programs* — 2014. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014. Retrieved at: [www.cdc.gov/tobacco/stateandcommunity/best_practices/pdfs/2014/comprehensive.p
df](http://www.cdc.gov/tobacco/stateandcommunity/best_practices/pdfs/2014/comprehensive.pdf)
60. Cigarette sales down after tax increases. Convenience Store News. April 19, 2009. <http://www.csnews.com/product-categories/tobacco/cigarette-sales-down-after-tax-increases>.
61. Ellen Merlo, Senior Vice President of Corporate Affairs, Philip Morris, 1994 draft speech to the Philip Morris USA Trade Council, January 11, 1994, Bates No. 2022811708/1755.
62. R.J. Reynolds Executive D. S. Burrows, “Estimated Change In Industry Trend Following Federal Excise Tax Increase,” September 20, 1982, Bates No. 501988846/8849
63. Philip Morris Executive Jon Zoler, “Handling An Excise Tax Increase,” September 3, 1987, Bates No. 2022216179/6180.
64. Philip Morris Executive Claude Schwab, “Cigarette Attributes and Quitting,” March 4, 1993, Bates No. 2045447810.

65. Chaloupka, FJ, et al., "Tax, Price and Cigarette Smoking: Evidence from the Tobacco Documents and implications for tobacco company marketing strategies," *Tobacco Control* 11:62-72, March 2002.
66. Public Health Law Center at William Mitchell College of Law. *Department of Justice Lawsuit: United States v. Philip Morris*. 2010.
<http://publichealthlawcenter.org/topics/tobacco-control/tobacco-control-litigation/united-states-v-philip-morris-doj-lawsuit>.
67. USDA Economic Research Service & U.S. Bureau of Labor Statistics. *The Tax Burden on Tobacco, 2007* (As cited in: Bonn A. Raising cigarette taxes reduces smoking, especially among kids (and the cigarette companies know it). Campaign for Tobacco-Free Kids. Oct 11, 2012.
68. Myers ML. Campaign for Tobacco-Free Kids Feb 19 2015. New Report finds tobacco industry exaggerates extent of illicit tobacco trade and proven strategies exist to prevent it. http://www.tobaccofreekids.org/press_releases/post/2015_02_19_iom
69. Chaloupka, FJ, "Macro-Social Influences: The Effects of Prices and Tobacco Control Policies on the Demand for Tobacco Products," *Nicotine and Tobacco Research* 1 (Suppl1):S105-9, 1999.
70. Tauras, J, "Public Policy and Smoking Cessation Among Young adults in the United States," *Health Policy* 6:321-32, 2004.
71. Tauras, J, et al., "Effects of Price and Access Laws on Teenage Smoking Initiation: A National Longitudinal Analysis," Bridging the Gap Research, ImpacTeen, April 24, 2001.
72. Chaloupka, FJ & Pacula, R, *An Examination of Gender and Race Differences in Youth Smoking Responsiveness to Price and Tobacco Control Policies*, National Bureau of Economic Research, Working Paper 6541, April 1998.
73. Evans, W & Huang, L, *Cigarette Taxes and Teen Smoking: New Evidence from Panels of Repeated Cross-Sections*, working paper, April 15, 1998.
74. Ringel, J & Evans, W, "Cigarette Taxes and Smoking During Pregnancy," *American Journal of Public Health* 91(11):1851-6, 2001.
75. Oredein, T & Foulds, J, "Causes of the Decline in Cigarette Smoking Among African American Youths From the 1970s to the 1990s," *American Journal of Public Health* e1-e11, doi:10.2105/AJPH.2011.300289, August 18, 2011.

76. U.S. Centers for Disease Control and Prevention (CDC), "Responses to Cigarette Prices By Race/Ethnicity, Income, and Age Groups – United States 1976-1993," *Morbidity and Mortality Weekly Report* 47(29):605-609, July 31, 1998, <http://www.cdc.gov/mmwr/preview/mmwrhtml/00054047.htm>.
77. Campaign for Tobacco-Free Kids Factsheet. Raising State Cigarette Taxes Always Increases State Revenues (and Always Reduces Smoking). <http://tobaccofreekids.org/research/factsheets/pdf/0098.pdf>.
78. Orzechowski & Walker. *The Tax Burden on Tobacco: Historical Compilation*. Vol. 49, 2014)
79. Campaign for Tobacco-Free Kids Factsheet, *State Options to Prevent and Reduce Cigarette Smuggling and to Block Other Illegal State Tobacco Tax Evasion*. 2016. Retrieved at <http://tobaccofreekids.org/research/factsheets/pdf/0274.pdf>;
80. Halper, E, "States Tobacco Revenue Surges," *Los Angeles Times*, December 27, 2005; Campaign for Tobacco-Free Kids, Factsheet, *The Case for High-Tech Cigarette Tax Stamps*. Retrieved at: <http://www.tobaccofreekids.org/research/factsheets/pdf/0310.pdf>)
81. U.S. Department of Health & Human Services. Reducing Tobacco Use: A Report of the Surgeon General, 2000. http://profiles.nlm.nih.gov/NN/B/B/L/Q/_/nnbblq.pdf
82. Henry J. Kaiser Foundation. State Health Facts. State Cigarette Excise Tax Rates. August 1, 2015. <http://kff.org/other/state-indicator/cigarette-excise-tax/#table>.
83. Campaign for Tobacco-Free Kids, *New York City Set to Implement Law Banning Tobacco Discounts as Tobacco Companies End Legal Challenge*. (July 25, 2014.) Retrieved at: http://www.tobaccofreekids.org/press_releases/post/2014_07_25_nyc.
84. Campaign for Tobacco-Free Kids. *Top Combined State-Local Cigarette Tax Rates*. 2016. Retrieved at: <https://www.tobaccofreekids.org/research/factsheets/pdf/0267.pdf>.
85. Apollonio DE, Glantz SA. (2016). Minimum Ages of Legal Access for Tobacco in the United States From 1863 to 2015. *American Journal of Public Health*, doi: 10.2105/AJPH.2016.303172.
86. Winicoff JP, Gottlieb M, Mello MM. Tobacco 21 – An idea whose time has come. *New Eng J Med* Jan 8, 2014 NEJM.org DOI: 10.1056/NEJMp1314626.
87. Institute of Medicine. *Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products*, Washington, DC: The National Academies Press. 2015. http://iom.nationalacademies.org/~media/Files/Report%20Files/2015/TobaccoMinAge/tobacco_minimum_age_report_brief.pdf

88. Bach L. *Tobacco Company Marketing to Kids*. Campaign for Tobacco-Free Kids. October 7, 2015.
89. Centers for Disease Control and Prevention. *Designing and Implementing an Effective Tobacco Counter-Marketing Campaign*. Atlanta GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office of Smoking and Health, First Edition. 2003.
90. Rumberger JS, Hollenback CS, Kline D. *Potential costs and benefits of smoking cessation for Indiana*. 2010. Retrieved at: www.lung.org/assets/documents/tobacco/economic-benefits.pdf, pg.232-235.
91. Centers for Disease Control and Prevention. Chronic Disease Health Promotion Data and Indicators. 2014. Retrieved at <https://chronicdata.cdc.gov/Funding/University-of-Illinois-at-Chicago-Health-Policy-Ce/vw7y-v3uk>

Executive Summary

Tobacco use is the single most preventable cause of disease, disability, and death in the United States. Nearly one-half million Americans still die prematurely from tobacco use each year, and more than 16 million Americans suffer from a disease caused by smoking. Despite these risks, approximately 42.1 million U.S. adults currently smoke cigarettes. And the harmful effects of smoking do not end with the smoker. Secondhand smoke exposure causes serious disease

and death, and even brief exposure can be harmful to health. Each year, primarily because of exposure to secondhand smoke, an estimated 7,330 nonsmoking Americans die of lung cancer and more than 33,900 die of heart disease. Coupled with this enormous health toll is the significant economic burden. Economic costs attributable to smoking and exposure to secondhand smoke now approach \$300 billion annually.

Fifty years have passed since the 1964 Surgeon General's report on smoking and health concluded: "Cigarette smoking is a health hazard of sufficient importance in the United States to warrant appropriate remedial action." There now is a robust evidence base for effective tobacco control interventions. Yet, despite this progress, the United States is not currently on track to achieve the *Healthy People 2020* objective to reduce cigarette smoking among adults to 12% or less by the year 2020. A 2007 Institute of Medicine (IOM) report presented a blueprint for action to "reduce smoking so substantially that it is no longer a public health problem for our nation." The two-pronged strategy for achieving this goal includes: 1) strengthening and fully implementing currently proven tobacco control measures; and 2) changing the regulatory landscape to permit policy innovations. Foremost among the IOM recommendations is that each state should fund a comprehensive tobacco control program at the level that the Centers for Disease Control and Prevention (CDC) recommends.

Evidence-based, statewide tobacco control programs that are comprehensive, sustained, and accountable have been shown to reduce smoking rates, as well as tobacco-related diseases and deaths. A comprehensive statewide tobacco control program is a coordinated effort to establish smokefree policies and social norms, to promote and assist tobacco users to quit, and to prevent initiation of tobacco use. This comprehensive approach combines educational, clinical, regulatory, economic, and social strategies. Research has documented the effectiveness of laws and policies in a comprehensive tobacco control effort to

protect the public from secondhand smoke exposure, promote cessation, and prevent initiation, including: increasing the unit price of tobacco products; implementing comprehensive smokefree laws that prohibit smoking in all indoor areas of worksites, restaurants, and bars, and encouraging smokefree private settings such as multiunit housing; providing insurance coverage of evidence-based tobacco cessation treatments; and limiting minors' access to tobacco products. Additionally, research has shown greater effectiveness with multicomponent interventional efforts that integrate the implementation of programmatic and policy initiatives to influence social norms, systems, and networks.

CDC's *Best Practices for Comprehensive Tobacco Control Programs—2014* is an evidence-based guide to help states plan and establish comprehensive tobacco control programs. This edition updates *Best Practices for Comprehensive Tobacco Control Programs—2007*. The 2014 edition describes an integrated programmatic structure for implementing interventions proven to be effective and provides the recommended level of state investment to reach these goals and to reduce tobacco use in each state.

These individual components are most effective when they work together to produce the synergistic effects of a comprehensive statewide tobacco control program. On the basis of evidence of effectiveness documented in the scientific literature and the experiences of state and local programs, the most effective population-based approaches have been defined within the following overarching components.

I. State and Community Interventions

State and community interventions include supporting and implementing programs and policies to influence societal organizations, systems, and networks that encourage and support individuals to make behavior choices consistent with tobacco-free norms. The social norm change model presumes that lasting change occurs through shifts in the social environment — initially or ultimately — at the grassroots level across local communities. State and community interventions unite a range of integrated activities, including local and

statewide policies and programs, as well as initiatives to eliminate tobacco-related disparities.

The most effective state and community interventions are those in which specific strategies for promoting tobacco use cessation, preventing tobacco use initiation, and eliminating exposure to secondhand smoke are combined with mass-reach health communication interventions and other initiatives to mobilize communities and to integrate these strategies into synergistic and multicomponent efforts.

II. Mass-Reach Health Communication Interventions

An effective state-level, mass-reach health communication intervention delivers strategic, culturally appropriate, and high-impact messages through sustained and adequately funded campaigns that are integrated into a comprehensive state tobacco control program. Typically, effective health communication interventions and countermarketing strategies employ a wide range of paid and earned media, including: television, radio, out-of-home (e.g., billboards, transit), print, and digital advertising at the state and local levels; promotion through public relations/earned media efforts, including press releases/conferences, social media, and local events; health promotion activities, such as working with health care professionals and other

partners, promoting quitlines, and offering free nicotine replacement therapy; and efforts to reduce or replace tobacco industry sponsorship and promotions.

Innovations in health communication interventions include the ability to target and engage specific audiences through multiple communication channels, such as online video, mobile Web, and smartphone and tablet applications (apps). Social media platforms, such as Twitter and Facebook, have facilitated improvements in how messages are developed, fostered, and disseminated in order to better communicate with target audiences and allow for relevant, credible messages to be shared more broadly within the target audiences' social circles.

III. Cessation Interventions

Comprehensive state tobacco control program cessation activities can focus on three broad goals: (1) promoting health systems change; (2) expanding insurance coverage of proven cessation treatments; and (3) supporting state quitline capacity.

Health systems change involves institutionalizing cessation interventions in health care systems and seamlessly integrating these interventions into routine clinical care. These actions increase the likelihood that health care providers will consistently screen patients for tobacco use and intervene with patients who use tobacco, thus increasing cessation. Expanding cessation insurance coverage removes cost and administrative

barriers that prevent smokers from accessing cessation counseling and medications, and increases the number of smokers who use evidence-based cessation treatments and who successfully quit. Expanding cessation insurance coverage also has the potential to reduce tobacco-related population disparities.

Quitlines potentially have broad reach, are effective with and can be tailored to diverse populations, and increase quit rates. Because state quitline services are free, remove time and transportation barriers, and are confidential, they are one of the most accessible cessation resources. Optimally, quitline counseling should be made available to all tobacco users willing to access the service.

IV· Surveillance and Evaluation

Surveillance is the process of continuously monitoring attitudes, behaviors, and health outcomes over time. Statewide surveillance is important for monitoring the achievement of overall program goals. Evaluation is used to assess the implementation and outcomes of a program, increase efficiency and impact over time, and demonstrate accountability.

Publicly financed programs need to have accountability and demonstrate effectiveness, as well as have access to timely data that can be used for program improvement and decision making.

Therefore, a critical infrastructural component of any comprehensive tobacco control program is a surveillance and evaluation system that can monitor and document key short-term, intermediate, and long-term outcomes within populations. Data from surveillance and evaluation systems can be used to inform program and policy directions, demonstrate program effectiveness, monitor progress on reducing health disparities, ensure accountability to those with fiscal oversight, and engage stakeholders.

V· Infrastructure, Administration, and Management

A comprehensive tobacco control program requires considerable funding to implement. Therefore, a fully functioning infrastructure must be in place in order to achieve the capacity to implement effective interventions. Sufficient capacity is essential for program sustainability, efficacy, and efficiency, and it enables programs to plan

their strategic efforts, provide strong leadership, and foster collaboration among the state and local tobacco control communities.

An adequate number of skilled staff is also necessary to provide or facilitate program oversight, technical assistance, and training.

The primary objectives of the recommended statewide comprehensive tobacco control program are to reduce tobacco use and the personal and societal burdens of tobacco-related disease and death. Research shows that the more states spend on comprehensive tobacco control programs, the greater the reductions in smoking. The longer states invest in such programs, the greater and quicker the impact.

Implementing comprehensive tobacco control programs at the levels of investment outlined in this report would have a substantial impact. As a result, millions of fewer people in the United States would smoke and hundreds of thousands of premature tobacco-related deaths would be prevented. Long-term investments would have even greater effects.

We know what works to effectively reduce tobacco use, and if we were to fully invest in and implement these proven strategies, we could significantly reduce the staggering toll that tobacco takes on our families and in our communities. We could accelerate the declines in cardiovascular mortality, reduce chronic obstructive pulmonary disease, and make lung cancer a rare disease. With sustained implementation of state tobacco control programs and policies, the *Healthy People 2020* objective of reducing adult smoking prevalence to 12% or less by 2020 could be attainable.

Indiana

Program Intervention Budgets

2014

Recommended Annual Investment

\$73.5 million

Deaths in State Caused by Smoking

Annual average smoking-attributable deaths	11,100
Youth aged 0-17 projected to die from smoking	150,700

Annual Costs Incurred in State from Smoking

Total medical	\$2,930 million
---------------	-----------------

State Revenue from Tobacco Sales and Settlement

FY 2012 tobacco tax revenue	\$457.2 million
FY 2012 tobacco settlement payment	\$129.5 million
Total state revenue from tobacco sales and settlement	\$586.7 million

Percent Tobacco Revenue to Fund at Recommended Level

13%

	Annual Total (Millions)		Annual Per Capita	
	Minimum	Recommended	Minimum	Recommended
I. State and Community Interventions				
Multiple social resources working together will have the greatest long-term population impact.	\$18.8	\$23.5	\$2.88	\$3.59
II. Mass-Reach Health Communication Interventions				
Media interventions work to prevent smoking initiation, promote cessation, and shape social norms.	\$5.1	\$7.3	\$0.78	\$1.12
III. Cessation Interventions				
Tobacco use treatment is effective and highly cost-effective.	\$20.6	\$33.1	\$3.15	\$5.06
IV. Surveillance and Evaluation				
Publicly funded programs should be accountable and demonstrate effectiveness.	\$4.5	\$6.4	\$0.68	\$0.98
V. Infrastructure, Administration, and Management				
Complex, integrated programs require experienced staff to provide fiscal management, accountability, and coordination.	\$2.2	\$3.2	\$0.34	\$0.49
TOTAL	\$51.2	\$73.5	\$7.83	\$11.24

Note: A justification for each program element and the rationale for the budget estimates are provided in Section A. The funding estimates presented are based on adjustments for changes in population and cost-of-living increases since *Best Practices* — 2007 was published. The actual funding required for implementing programs will vary depending on state characteristics, such as prevalence of tobacco use, sociodemographic factors, and other factors. See Appendix E for data sources on deaths, costs, revenue, and state-specific factors.